SALVATION ARMY DIVISION CAMP AND RETREAT CENTER

APPENDIX B

Salvation Army Camp and Retreat Biological Report

Prepared by Merkel & Associates

April, 19, 2008

SALVATION ARMY
DIVISIONAL
CAMP AND RETREAT
BIOLOGICAL REPORT

MUP #: 70-379W[2]
Log #: ER98-14-023

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Salvation Army Divisional Camp and Retreat Biological Report

SUMMARY

Merkel & Associates, Inc. (M&A) has prepared this biological impact analysis report for the County of San Diego for the proposed Salvation Army Divisional Camp and Retreat Project (County of San Diego Case Number MUP #: 70-379W2, Log #: ER98-14-023). The purpose of this report is to document the existing study area biological conditions; identify potential biological resource impacts that could result from proposed project implementation; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with the California Environmental Quality Act (CEQA), the County of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan, Resource Protection Ordinance (RPO), and Biological Mitigation Ordinance (BMO).

Located on Mussey Grade Road in Ramona, the Salvation Army Divisional Camp and Retreat project site is primarily comprised of Southern Mixed Chaparral but also contains Non-Native Woodland, Disturbed Habitat, Urban/Developed, Diegan Coastal Sage Scrub, Mafic Southern Mixed Chaparral, Coastal Sage-Chaparral Scrub, Non-Native Grasslands, Southern Coast Live Oak Riparian Forest, Mule Fat Scrub, Southern Willow Scrub, Emergent Wetland, and Coast Live Oak Woodland. The areas with reduced biological sensitivity generally occur in the immediate vicinity of the existing development. The least disturbed areas occur within the drainages and chaparral covered slopes on the north and western portions of the site. The site is located within San Diego County's MSCP Subarea Plan area and is subject to the BMO as well as the San Diego County (County) RPO. The on-site native and semi-native habitats meet the criteria for Biological Resource Core Areas (BRCA) as defined by the BMO.

The Salvation Army Divisional Camp and Retreat project includes a proposed 20-year phased expansion of existing camp facilities including some combination of expanded cabin facilities, increased tent camping/yurts, an educational camp, a retreat center building and associated facilities, additional staff housing, relocated maintenance facilities, expanded support facilities, improved parking, improved fire services and utilities, and the necessary leach fields and septic system components. Exactly what facility components are included varies between the 3 project alternatives. The project alternatives have been reconfigured to minimize impacts to sensitive biological resources including jurisdictional wetlands, wetland buffers, and oak woodlands. The 3 project alternatives are referred to as the Preferred Site Plan or Preferred Plan, which supports the largest number of camp users and facilities, and Reduced Alternatives I and II, which both support a decreased number of on-site activities and camp users. The Preferred Site Plan does not comply with some existing ordinances (BMO and RPO) and has been deemed not approvable. It is still included in this Biological Technical Report, as it was part of the original alternatives analysis. However, this report does not analyze the biological effects of a Fire Protection Plan for the Preferred Site Plan, as it cannot be approved and thus, an updated analysis is not necessary or relevant.

The Preferred Site Plan and each of the 2 Reduced Alternative Plot Plans each proposes significant impacts to Southern Mixed Chaparral, Coastal Sage Scrub, Coastal Sage-Chaparral Scrub, Non-Native Grasslands, Southern Coast Live Oak Riparian Forest, and Coast Live Oak Woodlands. Although a small area of Emergent Wetlands (less than 0.01 acre) lies within the project footprint (under any of the alternatives), impacts shall be avoided through fencing, signage, and monitoring as proposed herein. The remaining on-site impacts would occur within Disturbed Habitat, Non-Native Woodlands/Vegetation, or Developed areas and would not be significant. Finally, 0.04 acre of the oak impacts and 0.17 acre of the Non-Native Grassland impacts would occur off-site, as a result of construction, and 3.25 acres of on-site sage scrub and 0.28 acre of chaparral were previously cleared for percolation testing (these numbers are included within the habitat impact totals throughout the document). The off-site impacts and impacts from clearing are both significant and require mitigation. The 2 Reduced Alternative Plot Plans reduce quantitative vegetation community impacts by eliminating project elements and relocating facilities in less environmentally sensitive locations.

The Preferred Site Plan includes a retreat center and access road that would significantly impact the on-site wildlife corridor. The alternative plans relocate this facility, eliminating the associated wildlife corridor impacts.

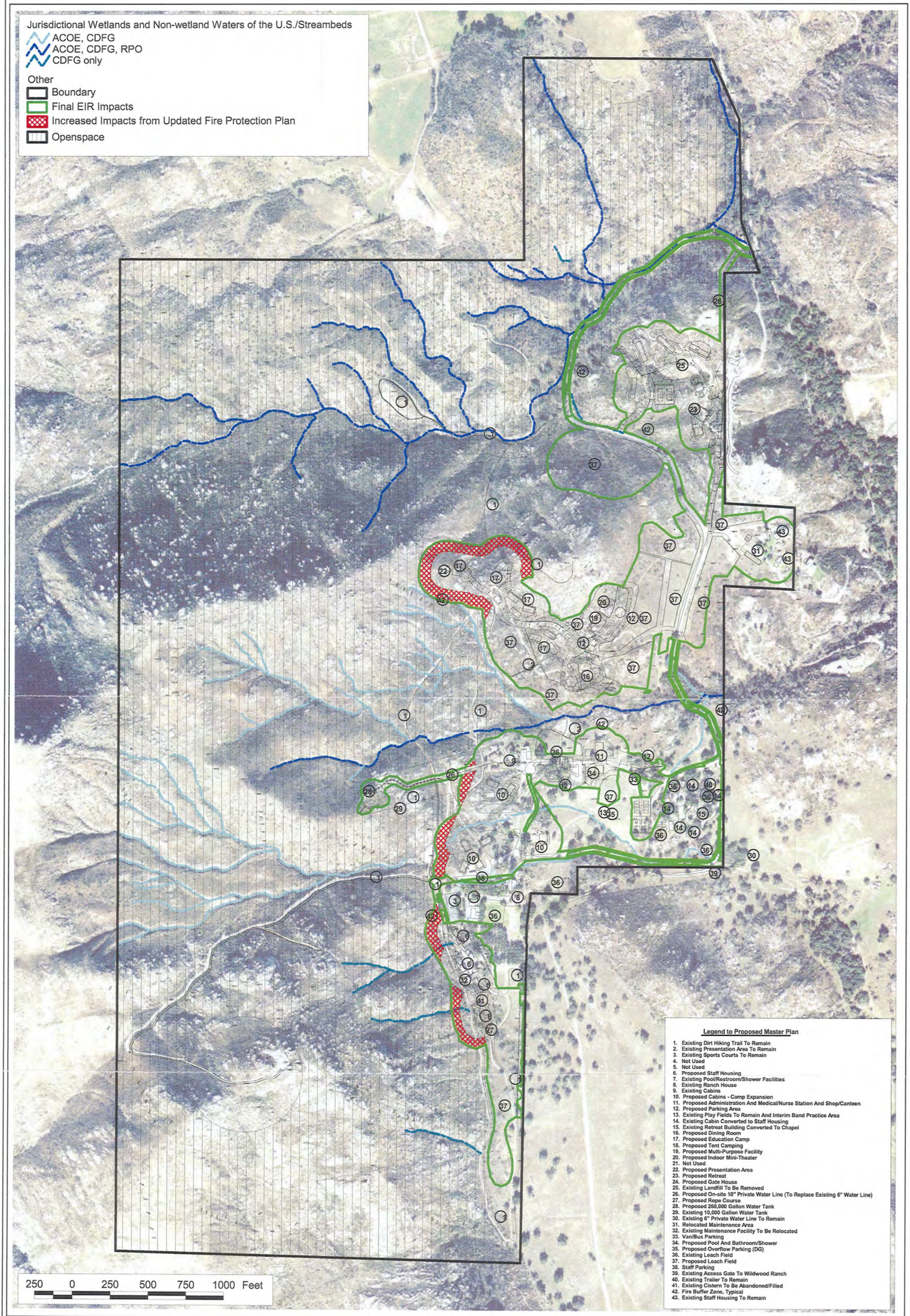
The project site supports a variety of (County) sensitive species typically associated with chaparral, sage scrub, and oak woodland habitats within the region. Most notable of these are Engelmann Oak (*Quercus engelmannii*), San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*), Orange-throated Whiptail (*Cnemidophorus hyperythrus*), Cooper's Hawk (*Accipiter cooperii*), Red-shouldered Hawk (*Buteo lineatus*), Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*), and Mule Deer (*Odocoileus hemionus*). As proposed, (under any alternative), the project would not impact any state or federally listed species; however, the Preferred Site Plan and either of the Reduced Project Alternatives would have significant impacts to Engelmann Oak.

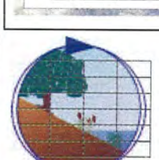
Biological mitigation is required for any new facilities, utilities, or clearing that impacts native plant communities, wildlife habitat, or sensitive biological resources. Habitat-based mitigation would occur within the Camp property in the form of an open space easement. In accordance with the County's MSCP Subarea Plan, mitigation lands would be protected through fee title transfer, conservation easement, or other appropriate title encumbrances acceptable to the County. Management and maintenance of mitigation lands is required to ensure that biological resource values are maintained; thus, the mitigation/preserved land will be managed and maintained by a qualified land manager. In addition, a small amount of wetland creation/restoration is anticipated on-site to off set impacts Non-Wetland Waters of the U.S. and jurisdictional wetlands (the proposed restoration area is currently occupied by Non-Native Grassland and has thus been included in the habitat impact totals listed previously).

This updated biological report contains revisions in response to comments received on the Draft Environmental Impact Report. In response to these comments and 2007 amendments to the RPO, the updated Fire Protection Plan (approved by the County) was developed, some County wetland jurisdictional boundaries have changed, and the open space easement has been reconfigured. These changes resulted in corresponding adjustments to the habitat

and jurisdictional wetland impact and mitigation quantifications. While no new impacts have been identified, some previous impacts have increased or decreased accordingly; however, there is no change in the degree of impact significance and all habitat impacts remain mitigable on-site. Overall, the amount of habitat impacts has increased due to the need for larger fire management zones. The total area of County jurisdictional wetlands on-site has decreased, based on 2007 changes to the definition of an RPO wetland; and the open space easement has been enlarged and reconfigured to minimize edge effects and include all riparian forest adjacent to an RPO wetland, while exceeding habitat mitigation requirements.

The aforementioned changes between the biological technical report for the Draft Environmental Impact Report (EIR) and this final biological technical report have also been depicted within the Summary Figure, which indicates where increases in impacts would occur, displays the new open space easement, and provides updated RPO jurisdictional wetland locations.





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Draft EIR and Final EIR Habitat Impact Comparison Map

Salvation Army Divisional Camp Alternative Plan

Summary Figure

INTRODUCTION

This document reports the results of 1999, 2000, 2001, 2006, and 2007 biological surveys and wetland delineations performed by Merkel & Associates (M&A) at the Salvation Army Divisional Camp and Retreat site (Camp) on behalf of BRG Consulting. Quantification of impacts was based on the project plot plans supplied by Matalon Architecture and Planning, details regarding the impact assessment are provided in the Methods section.

In preparing this document, M&A reviewed existing biological information from the Camp and neighboring lands and conducted general biological surveys, focused surveys, wetland delineations, and a corridor analysis. The document has been revised to address comments from public review.

Currently, the Camp supports a church retreat and recreational facilities including staff housing, cabins, a dining hall, a swimming pool, activities buildings, outdoor recreational facilities, and trails over approximately 578 acres.

PROJECT DESCRIPTION

The Preferred Site Plan is a 20-year expansion, low-density camping facility. At the end of the 20-year expansion, the Camp would accommodate up to a maximum of 748 users. The Preferred Site Plan would include the major components described below.

A cabin camp component that expands the existing 5 masonry cabins to a total of 12 cabins and adds a building for arts and crafts. The tent camp component would expand and relocate 6 more permanent dome-shaped tent-like structures (yurts) to a total of 10. In addition, a toilet/shower building and outdoor meeting area with wood log seating are proposed. At the proposed nature study/educational camp, campers would stay in cabins and use nearby classrooms and the adjacent natural areas to learn about their surrounding environment. An eventual build-out of 9 cabins with toilets and showers, a building for classrooms, and an outdoor meeting area made of concrete steps for seating are planned for the nature study area. The 2 existing staff housing buildings would remain. The 4 cabins in the southeastern portion of the Camp would be converted to house staff members once the new retreat component is constructed. Four new staff housing buildings in the southeast portion of the Camp would house additional staff members. The maintenance operation would be moved from its current location, in the southeastern portion of the site, to a new location in the central portion of the project site. The existing facility would be demolished, and a new facility would be constructed. A 6-foot chain link fence would enclose the 2 buildings, along with a yard area between them, for security purposes.

A new central dining facility would service the cabin camp, tent camp, nature study/educational camp, as well as any day-uses. Additionally, a new multi-purpose building would be located in the east-central portion of the Camp. An indoor mini-theater would be located adjacent to the multi-purpose building. A new central administrative cluster of buildings is also proposed to service the Camp.

The existing retreat facility would be converted to a chapel. The new retreat, at eventual build-out, would include 5 two-story buildings, which would house approximately 175 overnight guests. Functions would include retreats and conferences for young adults, couples, men's groups, women's groups, seniors, and other compatible users. A building with a flexible meeting room, kitchen, and

breakout space is also proposed. The existing playing fields, courts, and swimming pool would remain. Additional recreation areas would include new tennis and basketball courts, a new swimming pool, a recreational rope course, and a new bathroom/shower building. The proposed parking areas (188 spaces) would be covered with decomposed granite. Potable water is supplied by an existing 6-inch water line in Mussey Grade Road. An existing 10,000-gallon water storage tank located within the existing Camp would remain. To increase fire fighting water capacity and flows, a new approximately 250,000-gallon water tank would be added near the existing 10,000-gallon water tank. A new on-site private water line would connect with the existing 6-inch water line in Mussey Grade Road at the main entry to the Camp. The existing Camp is serviced by a standard septic system with leach fields. The expanded Camp would also be serviced by a standard septic system with leach fields. Infiltration basins and grass swales would be used to prevent adverse water quality impacts.

Under the Reduced Alternative I, all components would be the same as the Preferred Site Plan with the following exceptions: expanded and relocated tent camping component (a total of 10 yurts, a restroom/shower building, outdoor seating area, and an outdoor presentation area) and the gate house would be eliminated, and the retreat center would be decreased by one 16-unit cabin. Under this alternative, the retreat center would also be relocated to the south of its Preferred Site Plan location. The proportionate reduction in staff necessary for this alternative would be 12 people. Implementation of Reduced Alternative I would reduce the calculated capacity of the Camp by 133 users for an overall Camp capacity of 615 users and would decrease the total project building footprint by 11,150 square feet.

Under the Reduced Alternative II, all components would be the same as the Preferred Site Plan with the following exceptions: the expanded and relocated tent camping component (a total of 10 yurts, a restroom/shower building, outdoor seating area, and an outdoor presentation area) and the gate house would be eliminated; the retreat center would be relocated nearer to the other Camp facilities and decreased by one 16-unit and one 18-unit cabin; the education camp would be decreased by 3 cabins; and the multi-purpose building would be reduced in size and capacity. The proportionate reduction in staff necessary for this alternative would be 12 people. Implementation of Reduced Alternative II would reduce the calculated capacity of the Camp by 235 overnight users for an overall Camp capacity of 513 users and would decrease the total project's building footprint by 39,900 square feet.

Much of the project site will remain undeveloped under any of the proposed alternatives. These undeveloped areas shall not be subject to grading, clearing, construction or other disturbance associated with project construction and/or Camp operations.

The Camp project has undergone a number of changes over the course of the past 9 years. Some of the more substantial changes have taken place, largely as a result of County Department of Planning and Land Use (County) review and public comments. The most substantial project changes are outlined herein:

- An additional alternative, which further reduces Camp capacity, was developed for review.
- All previously proposed new trails and overnight camping activities have been eliminated from the project. All that remains, in terms of hiking trails, are the existing trails open for day use by camp visitors only. This has reduced the potential for trail impacts to the wildlife corridor and eliminated any use within 4,000 feet of a Golden Eagle (*Aquila chrysaetos*) nest.
- The recreational vehicle component of the project has been eliminated from the alternatives.
- Roadway improvements are to be avoided, to the extent feasible, within environmental sensitive areas.

- In response to public comments, the project's open space easement has been increased in total size and configured to minimize edge effects.
- Wetlands and wetland buffers were re-examined relative to the 2007 Resource Protection Ordinance (RPO) and the open space was increased to include oak woodlands adjacent to RPO wetlands.
- The Fuel Modification Zone was enlarged, based on a site-specific, County approved Fire Protection Plan, and impacts were assessed accordingly for the Reduced Alternatives (but were not addressed for the Preferred Site Plan as it is unapprovable).

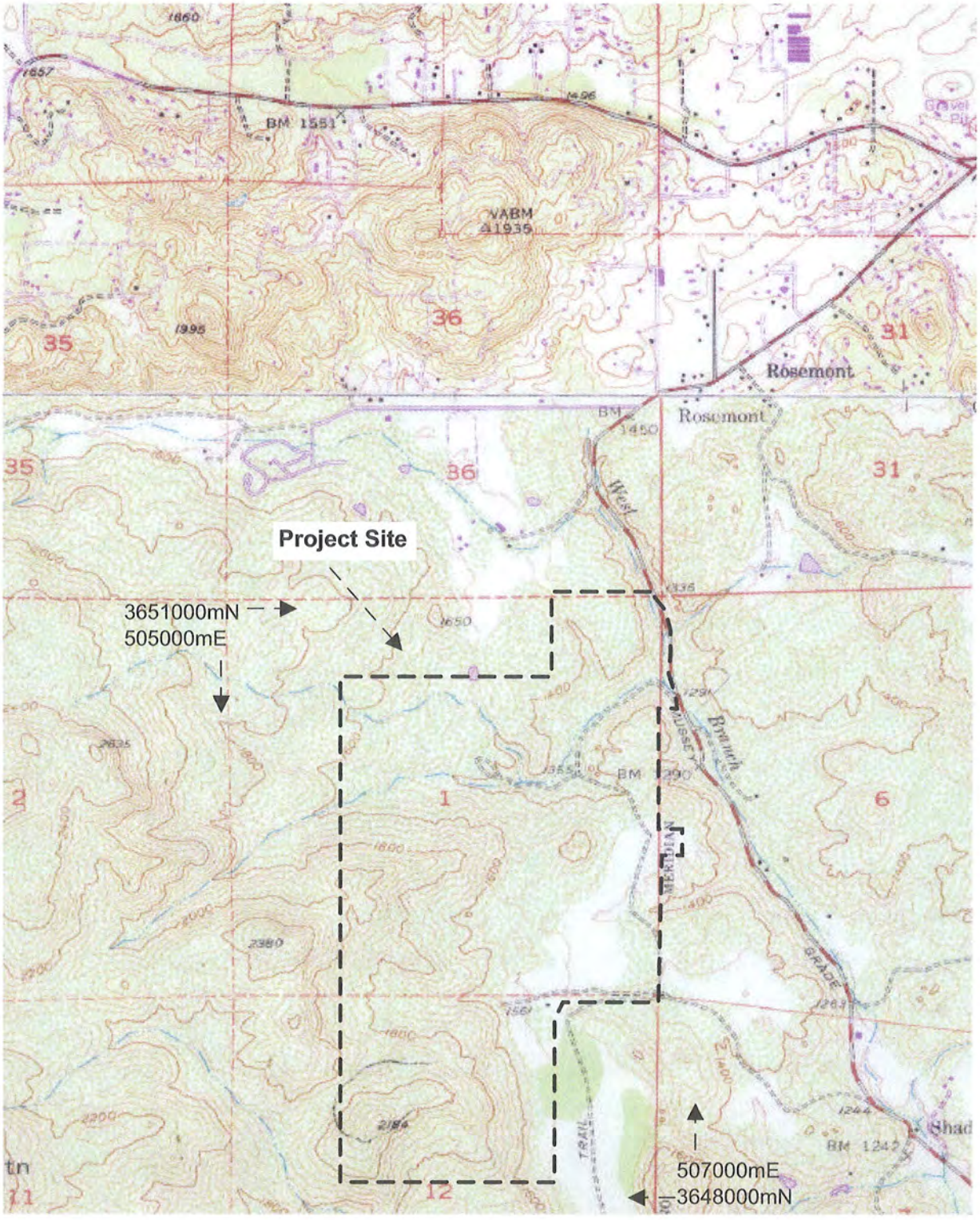
The project has incorporated a number the previous biological report's recommendations as "Design Features" in an effort to avoid and/or minimize biological impacts. These Features are listed below and will be referred back to throughout the document where appropriate:

1) The open space area on-site shall be dedicated as a conservation easement to the County of San Diego with the California Department of Fish and Game (CDFG) as a third party;
2) Habitat Management Plan (HMP) shall be prepared for the conservation easement and submitted to the County of San Diego prior to grading, clearing or use/reliance on the Major Use Permit. An established conservancy group subject to County approval shall be selected to manage the habitat in accordance with the approved HMP;
3) If it is necessary to apply an herbicide for weed control before laying asphalt or other impermeable surfaces, one such as dichlobenil (Casoron®) or glyphosate (Roundup®) shall be utilized by a licensed pesticide applicator in order to prevent damage to existing tree roots or roots that later may grow beneath the pavement;
4) Any staging/storage areas for equipment and materials shall be located within identified development areas;
5) All excavated soils (from trenching operations) shall be stored above the ordinary high water mark for all drainages;
6) Silty turbid water shall not be discharged into any drainage; such water shall be settled, filtered, or otherwise clarified prior to discharge (this condition may augment, but shall not override anything within the project's Regional Water Quality Control Board Certification);
7) Spoil, trash, or any debris from construction of the project or operation of the facilities shall be promptly removed and transferred to an approved disposal facility off-site;
8) Speed bumps or similar speed reduction devices shall be installed from the site entrance to the Retreat Center access road.
9) The 15 mph speed limit currently established on the Camp shall be maintained;
10) No re-grading of the dirt road "cross" trail shall occur in areas of sensitive plants and new trails shall be prohibited;
11) Foot stakes shall be installed on the dirt "cross" trail border every 100 feet;
12) Signage shall be posted at regular 200-foot intervals along both sides of the dirt "cross" trail instructing hikers to remain on the marked trail and refrain from collecting flowers/plants;
13) The existing trail in the northwestern portion of the project site shall be bound by signs that prohibit human intrusion into surrounding habitats and indicate the presence of environmentally sensitive areas;
14) Low-pressure sodium lamps shall be used in conjunction with cut-off shields (fully shielded/full cut off lighting) to reduce the adverse effects of artificial lighting spilling into native habitats;
15) New lighting shall not be allowed within 100 feet of the property boundary, wildlife corridor, or preserved areas;

16) Fencing (non-barbed) shall be constructed at the perimeter of open space easements where they border development (a Camp facility or roadway) to prevent intrusion into the preserve areas;
17) Wildlife crossing signage shall be posted in the vicinity of the local movement corridor;
18) Fencing shall also be installed to facilitate use of the Mussey Grade Road culvert at the West Fork of San Vicente Creek by wildlife;
19) Signage shall be installed in the area of the Camp entrance to notify visitors of the presence of sensitive flora and fauna within the vicinity and the need for adherence to postings throughout the project site;
20) Install Slow – Wildlife Crossing signs and speed bumps at the turnout for the Retreat Center for entering visitors, 100 feet upslope for existing visitors, and on both sides of the road every 250 feet along the camp access road from the junction of the access road with Mussey Grade Road;
21) Signage shall be posted along the perimeter of the open space easements that adjoin the project site and more frequently in the vicinity of any sensitive habitat; the distance between signs will vary depending on topography, vegetation density and other factors that affect visibility, generally, signs will be about 100 feet apart unless factors indicate that signs should be closer or farther apart;
22) Temporary construction fencing shall be erected to delineate Emergent Wetlands along the roadway. Temporary construction fencing and monitoring by a qualified biologist shall be maintained throughout the construction period to prevent inadvertent impacts. Permanent split-rail fencing shall be installed and maintained following construction. Both temporary construction and permanent split-rail fencing shall include signs that mark the areas as an "Environmentally Sensitive Area – No Entry."
23) Landscaping within the project area shall not include invasive exotic species, as defined by the California Native Plant Society;
24) Leash law restrictions shall be posted and enforced on-site;
25) Resident staff shall be prohibited from keeping cats, unless they are strictly confined to indoors. The applicant shall enforce this regulation with a signed agreement (covenant) with any personnel living temporarily or permanently on-site which details all of the sites rules and regulations and allows for eviction or fee imposition if the regulations are violated;
26) Promote oak seedling recruitment through planting programs by Camp users and growth in the road fire-clearance zones;
27) Conduct weekly fugitive dust monitoring activities from April through November and prior to any large special events;
28) Perform road-wetting immediately prior to and during any special events and, if dust levels are such that roadside plants are coated with dirt, immediately after weekly fugitive dust monitoring;
29) Remove any trash or roadkill from the internal roadway to avoid luring other animals into the roadway; and,
30) All buildings shall be constructed to eliminate cavities and crevasses or other measures to reduce the likelihood of bat colonization. Any unused structure shall be dismantled before bats have an opportunity to colonize it. Any structure slated for removal shall be examined for sensitive bat species before demolition and, if significant impacts would occur, mitigation shall be developed and implemented to the satisfaction of the DPLU Director.

LOCATION

The project site includes portions of sections 1 and 12 of Township 14 South, Ranges 1 West and 1 East of USGS 7.5' San Vicente Quadrangle, San Bernardino Base Meridian (Figure 1). Site elevation ranges from approximately 1,300 to 2,000 feet. The project site is bounded on the northeast by Mussey Grade Road and on the west by extensive undisturbed chaparral. To the north, south, and southeast are areas of rural or extensive agricultural development. The project site lies within the County of San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan boundary and qualifies as a Biological Resource Core Area (BRCA).



1" = 2,000'

Project Vicinity Map

Source: USGS 7.5' San Vicente Reservoir and San Pasqual, CA Quadrangles

Figure 1

METHODS

Field investigations were performed by Merkel & Associates biologists: Melissa A. Booker, Craig H. Reiser, Kyle L. Ince, David A. Mayer, Vanessa A. Lee, Navroop K. Jassal, Antonette T. Gutierrez, Jean-Paul W. LaCount, Adam H. Behle, Tracey A. Wurth, Kara A. Altvater, Brian D. Parker, Daylon L. Teel, Rebecca A. Atiles, Roland A. Sosa, and Stephen Rink (Table 1).

Vegetation communities were initially plotted on a 1" = 550' color aerial photograph (dated January 18, 1997), then transferred to an ArcView® (Version 3.2) project file. The 1999 vegetation map was revised based on vegetation mapping from a 2000 1"=200' color aerial photograph and ground-truthing surveys. The map was further revised based on 2001 intensified wetland investigations.

In 1999, general biological surveys were conducted in April/May. Additional biological investigations were conducted in 2000, 2001, 2003, 2006, and 2007. Plant communities and slope exposures within the specified study area were surveyed on-foot. Plant identifications were either resolved in the field or were later determined through verification of voucher specimens. Soil types were determined based on the U.S. Department of Agriculture Soil Conservation Service San Vicente Reservoir Quadrangle map and were further investigated for the purposes of the wetland delineation, as necessary.

Presence of wildlife species was determined through direct observation (aided by 7 x 35 power binoculars), identification of avian songs or call notes, or by location of sign.

Biological survey reports from the immediate area and California Natural Diversity Database (CNDDB) records were reviewed for the presence of sensitive biological resources (CDFG 1997 and 2006, PSBS 1993, Merkel & Associates 2001, Scheidt 1997).

Scientific nomenclature used in this report is from the following references: vegetation, Holland (1986) and Oberbauer (1996); flora, Hickman (1993) and Baldwin et al. (2004); butterflies, Opler and Wright (1999); amphibians and reptiles, Crother et al. (2001 and 2003); birds, American Ornithologists' Union (1998 and 2005); and mammals, Wilson and Reeder (1993). Nomenclature for this final report has been retained from the 2006 report to avoid confusion.

U.S. Fish and Wildlife Service (USFWS) protocol California Gnatcatcher (*Polioptila californica*) surveys were conducted in July and August 1999. Sensitive plant surveys for late-flowering sensitive plants such as Orcutt's Brodiaea (*Brodiaea orcuttii*) and Delicate Clarkia (*Clarkia delicata*), vegetation map ground truthing, and a wetland delineation were conducted in May 2000. Additional sensitive plant surveys [Heart-leaved Pitcher Sage (*Lepechinia cardiophylla*)], wetland delineation work, oak tree surveys, impact analysis, vegetation map ground truthing, and a Least Bell's Vireo (*Vireo bellii pusillus*) habitat assessment were conducted in November 2000 and February 2001. A habitat assessment of the site for Stephens' Kangaroo Rat (*Dipodomys stephensi*) suitability led to small mammal trapping surveys in 2001. The specific methods of the assessment and trapping are detailed in Appendix 9, Presence/Absence Trapping Surveys for Stephens' Kangaroo Rat Salvation Army Mussey Grade Project Ramona, California. Also in spring 2001, protocol USFWS Quino Checkerspot Butterfly (*Euphydryas editha quino*) surveys were performed throughout the project site. In the winter of 2001, an intensive wetland delineation was conducted along the West Fork of San Vicente Creek and in other areas where development may impact wetlands or Non-Wetland

Waters of the U.S. (Non-Wetland Waters). The methodology for each of the focused surveys and the wetland delineation are discussed further within the following sub-sections.

The site was revisited in 2003, following the Cedar Fire, to assess the vegetative damage and potential for recovery; and again in 2006 to quantify oak tree impacts (by number of trees) and review the County jurisdictional wetland conditions. Lastly, the on-site wetlands were re-assessed in 2007 based on the 2007 RPO revised wetland definition. A summary of surveys is provided in Table 1.

Table 1. Survey Dates, Times, Staff[1], Purpose, and Weather Conditions

DATE	TIME	STAFF	PURPOSE	CONDITIONS
April 21, 1999	0915-1640	MAB, CHR	Vegetation mapping, sensitive plant surveys, and general zoological surveys	Overcast; calm, wind 0-5 mph; temperatures ranging from 60-65°F
April 28, 1999	1000-1400	MAB, KLI	Vegetation mapping, sensitive plant surveys, and general zoological surveys	Overcast; drizzle; moderate breeze approximately 15 mph; temperatures ranging from 55-60°F
May 25, 1999	0700-0830	MAB	Vegetation mapping, mapping of cleared percolation testing areas	Partially cloudy, clearing fog; calm, wind 0-5 mph; temperature 64°F
July 26, 1999	0735-1055	MAB	California Gnatcatcher protocol survey	Sunny; calm, wind 0-5 mph; temperatures ranging from 63-75°F
August 5, 1999	0700-1030	MAB	California Gnatcatcher protocol survey	Overcast, cloud cover burns off at 0900 to sunny; wind light 1-7 mph; temperatures ranging from 63-75°F
August 13, 1999	0820-1100	MAB, NKJ	California Gnatcatcher protocol survey	Sunny; wind 1-3 mph rising to 4-7 mph; temperatures ranging from 68-75°F
March 27, 2000	1115-1215	MAB	Quino Checkerspot Butterfly habitat assessment	Overcast, light rain; wind 4-12 mph; temperature 58°F
April 14, 2000	0900-0943	MAB, DAM	Arroyo Toad habitat assessment	Partly cloudy, drizzle; calm, wind 0-3 mph; temperature 64°F
May 5, 2000	1100-1600	VAL, NKJ	Wetland delineation	Partly cloudy; wind 0-4 mph; temperature 67°F
May 8, 2000	1030-1530	VAL, NKJ	Wetland delineation	Partly cloudy; wind 0-4 mph; temperatures ranging from 72-80°F
May 12, 2000	0900-1500	VAL, KLI, AHB	Wetland delineation and sensitive plant survey	Sunny; wind 0-3 mph; temperatures ranging from 80-85°F
May 22, 2000	0930-1430	VAL, AHB	Wetland delineation	Sunny; wind 1-3 mph; temperatures ranging from 88-92°F
December 13, 2000	0800-1430	MAB, VAL, ATG, KAA, NKJ	Wetland delineation, additional vegetation mapping, and Least Bell's Vireo habitat assessment	Partly cloudy; wind 0-5 mph; temperatures 60-64°F
December 14, 2000	1000-1530	KLI, AHB, KAA, DMJ, VAL	Rare plant survey and oak survey	Sunny; wind 0-5 mph; temperature 65°F

DATE	TIME	STAFF	PURPOSE	CONDITIONS
December 15, 2000	0900-1400	AHB, KAA	Oak survey	Sunny; wind 0-4 mph; temperature 67°F
December 20, 2000	0830-1340	KLI, CHR, VAL	Rare plant survey	Sunny; wind 0-2 mph; temperature 55°F
February 14, 2001	1100-1530	VAL, TAW	Oak survey and additional vegetation mapping	Cloudy; wind 0-4 mph; temperature 56°F
March 5, 2001	0930-1410	VAL, CHR, NKJ	Quino Checkerspot Survey	Sunny; wind 3-5 mph; temperature 65-70°F
March 13, 2001	0930-1530	VAL, ATG, JPL	Quino Checkerspot Survey	Sunny; wind 1-4 mph; temperature 67-74°F
March 15, 2001	1000-1530	NKJ, ATG, JPL	Quino Checkerspot Survey	Partly cloudy; wind 1-4 mph; temperature 68-70°F
March 22, 2001	1100-1230	VAL, KLI, NKJ	Quino Checkerspot Survey Attempted	Mostly cloudy; wind 1-3 mph; temperature 64-68°F
March 26, 2001	1145-1300	VAL, KLI, NKJ	Quino Checkerspot Survey Attempted	Mostly cloudy; wind 0-5 mph; temperature 63°F
March 29, 2001	0900-1200	VAL, ATG, CHR	Quino Checkerspot Survey Attempted	Mostly cloudy; wind 3-5 mph; temperature 61-62°F
March 30, 2001	0945-1530	VAL, JPL	Quino Checkerspot Survey	Sunny; wind 0-5 mph; temperature 78-83°F
April 2, 2001	1045-1200	VAL, ATG, NKJ	Quino Checkerspot Survey Attempted	Mostly cloudy; wind 3-7 mph; temperature 64-60°F
April 5, 2001	0930-1330	VAL, NKJ, JPL	Quino Checkerspot Survey	Sunny; wind 3-5 mph; temperature 65-67°F
April 10, 2001	1020-1300	VAL, SRR, JPL	Quino Checkerspot Survey Attempted	Mostly cloudy; wind 0-5 mph; temperature 63°F
April 13, 2001	0930-1415	ATG, NKJ, JPL	Quino Checkerspot Survey	Sunny; wind 1-8 mph; temperature 67-74°F
December 17, 2001	1230-1600	MAB, VAL, KAA	Wetland Delineation	Partially cloudy; calm, wind 0-3 mph; temperatures ranging from 55-60°F
December 18, 2001	1100-1600	VAL, KAA	Wetland Delineation	Sunny; calm, wind 0-3 mph; temperatures ranging from 60-62°F
December 19, 2001	1100-1600	VAL, KAA	Wetland Delineation	Sunny; calm, wind 0-3 mph; temperature 64°F
December 20, 2001	1030-1600	VAL, BDP	Wetland Delineation	Partially cloudy; calm, wind 0-3 mph; temperatures ranging from 59-60°F

DATE	TIME	STAFF	PURPOSE	CONDITIONS
December 26, 2001	1000-1630	VAL, KAA	Wetland Delineation	Sunny; calm, wind 0-3 mph; temperatures ranging from 68-70°F
November 18, 2003	0800-1200	MAB, ATG	Post-fire Assessment	Sunny (0% cover); wind 5 mph; temperature 70-75°F
May 9, 2006	0930-1400	MAB, RAA, RAS	Impact Oak Tree Inventory	Partially cloudy (70% cover); wind 0-5 mph; temperature 64°F
June 15, 2006	0800-1300	MAB, DLT	Field review of County Jurisdictional Wetlands	Partially cloudy; wind 0-5 mph; temperature 70-75°F
July 2, 2007	0800-1100	MAB, SRR	Field review of County Jurisdictional Wetlands per 2007 RPO	Sunny (0% cover); wind 5-10 mph; temperature 80-93°F

MAB = Melissa A. Booker, CHR = Craig H. Reiser, KLI = Kyle L. Ince, NKJ = Navroop K. Jassal, DAM = David A. Mayer, VAL = Vanessa A. Lee, AHB = Adam H. Behle, ATG = Antonette Gutierrez, TAW = Tracy A. Wurth, KAA = Kara A. Altvater, JPL = Jean-Paul W. LaCount, BDP = Brian Parker, RAA = Rebecca A. Atiles, RAS = Roland A. Sosa, DLT = Daylon L. Teel, and Stephen R. Rink = SRR

[1] Staff conducted listed species surveys under USFWS Recovery Permits 797999-6 and 068072-1.

FOCUSED AND PROTOCOL SURVEY METHODS

The rare and narrow endemic plant surveys were undertaken in all areas of potential occurrence. Suitable habitats were visually investigated for species presence/absence.

The site was assessed for the potential presence of Arroyo Toads (*Bufo californicus*) on April 14, 2000. The West Fork of San Vicente Creek was examined for the presence of suitable habitat conditions including creekbed width and substrate; type and density of overhanging vegetation; presence of adjacent sandy benches or terraces; and the size of the supporting watershed as well as the condition of nearby and/or downstream habitat. The creekbed and associated vegetation were examined on-site from the Camp entrance upstream until the riparian vegetation is replace by Southern Mixed Chaparral and continues off-site, downstream for a short distance. M&A biologist, Melissa Booker, also performed an assessment of the site's potential to support Least Bell's Vireo in 2001. The assessment included the riparian habitats that border the West Fork of San Vicente Creek from Mussey Grade Road west until the riparian vegetation is replaced by dense chaparral. Habitat suitability was visually assessed based on known species habitat preferences and requirements.

In order to determine the presence/absence of the Quino Checkerspot Butterfly, M&A conducted focused surveys for this federally endangered butterfly at the project site. The surveys followed the recommended guidelines of the USFWS Quino Checkerspot Butterfly Survey Protocol dated January 2000.

M&A biologists, authorized under the federal Endangered Species Act (ESA) section 10(a)(1)(A) permit #797999, conducted protocol surveys for the federally threatened Coastal California Gnatcatcher according to the required conditions noted in the USFWS California Gnatcatcher protocol (USFWS 1997). California Gnatcatcher survey dates and times varied according to weather and scheduling conditions, and individual biologists used professional judgment to comply with USFWS protocol as closely as possible. The project site was located within a jurisdiction which is signatory to an approved Natural Communities Conservation Plan (NCCP) (County of San Diego MSCP); therefore, a 3-visit presence/absence survey was performed. California Gnatcatcher surveys

covered all areas of on-site Diegan Coastal Sage Scrub. Additionally, where Coastal Sage-Chaparral Scrub occurred within areas of potential impact, surveys were conducted within this habitat type.

Due to the presence of potentially suitable habitat, a habitat assessment and trapping surveys were conducted to determine the presence/absence of the Stephens' Kangaroo Rat on-site. Mr. Philippe Vergne of ENVIRA conducted the work, under USFWS permit PRT 831-207. The habitat assessment consisted of an initial "walkover" survey, which identified kangaroo rat sign on-site (Vergne 2001). The site was then trapped using standard protocols developed for Stephens' Kangaroo Rat.

WILDLIFE CORRIDOR ANALYSIS

The corridor analysis completed for the Camp included analysis of regional aerial photography, regional vegetation, topography, and the results of fieldwork that investigated the presence of tracks, scat, or other sign and documented wildlife sightings within or immediately adjacent to the site. The determinations within this report were reached through a map-based analysis of likely corridor areas, supplemented with the results of general biological fieldwork, and review of wildlife movement work from the vicinity. The premise behind the map-based analysis is that wildlife typically follow the path of least resistance that affords them sufficient cover. This concept of least-cost-path (LCP) corridor analysis is defined and discussed in peer review literature and has been used extensively to develop Geographic Information System (GIS) based models for predicting wildlife movement and defining wildlife habitat corridors (Hartley and Aplet undated, Walker and Craighead 1997, Casterline et al. 2003). The key assumption of the LCP analysis allows that "animals will follow an optimum route between two points that minimizes their exposure to low quality habitat" (Hartley and Aplet undated). It is a method of delineating the movement routes that would be most likely used by the majority of wildlife to transit an area. In order to utilize this method, one must assess wildlife habitat quality within and surrounding the project site and one must determine regionally where wildlife would be traveling to and from, or what should be "connected" for the purposes of supporting wildlife populations in perpetuity. The value of habitats for wildlife movement is determined both by the characteristics of the habitat and the species-specific needs. However, in the absence of a "target" species, a more general approach has been taken to assess the value of habitats relative to their ability to support the movement of multiple species known from the area. Therefore, the on-site habitats were assessed for potential to support general wildlife movement, based on their position relative to connecting off-site significant wildlife habitat areas, the level of vegetative cover they provide/habitat quality, the topography, and the distance from existing human use and/or development.

To assess the habitat quality surrounding the project site and determine regionally where wildlife would be traveling to and from, or what should be "connected", M&A utilized habitat quality assessments conducted for the MSCP, examined recent aerial photography, and regional vegetation maps.

Having identified the larger areas of high quality habitat and the smaller, more linear areas that connect them, M&A next examined topography to identify paths of least resistance in terms of energetics and likely movement routes (mammals are expected to move along canyon bottoms, through riparian corridors, and along ridgelines).

Finally, an examination of existing human use and/or development relative to potential corridors can help to identify more likely movement routes. The concept of protecting corridors from development

is based on the assumption that wildlife avoid areas of human development in favor of higher quality habitats that afford greater protection and distance from humans and their developments. Thus, areas with appropriate topography may not be as readily traveled by wildlife if their native habitats are fragmented or replaced by non-native habitats or development.

WETLAND DELINEATION METHODS

M&A biologists conducted the initial wetland delineation work within the project footprint in May 2000. Additional wetland delineation work was conducted in December 2000, which covered areas outside of the proposed project footprint and compiled wetland delineation data for the remainder of the site. A more intensive wetland delineation was conducted in response to County staff comments and requests. The more intensive wetland delineation survey was performed December 17 through December 20 and December 26, 2001. Finally, the site was revisited in 2006 to photo document the conditions of all San Diego County jurisdictional wetlands and in 2007 to reassess jurisdictional wetlands following the adoption of the 2007 RPO, which altered the definition of County jurisdictional wetlands. While the purpose of the 2007 fieldwork was to re-assess County wetland jurisdiction under the 2007 RPO, all wetland locations and boundaries were checked and previously inaccessible areas were mapped. Mapping utilized a Global Positioning System (GPS) and/or updated aerial photograph, which provided a much clearer view of the drainages due to the loss of overstory and dense chaparral from the Cedar Fire.

Delineations were performed using the routine on-site determination methods noted in the 1987 ACOE Wetland Delineation Manual (Environmental Laboratory 1987). In addition, the delineation effort was expanded to identify Non-Wetland Waters under federal jurisdiction and streambeds under the jurisdiction of the CDFG and the County's RPO. Data points were taken along transects at regular, close (approximately 10-foot) intervals to delineate jurisdictional wetlands to the satisfaction of County staff. The wetlands and other jurisdictional waterways on-site were delineated on a 1" = 80' color Infrared aerial photograph overlaid with topography, then transferred to an ArcView® (Version 3.2) project file. Streambed widths were noted on the topographic map to provide true jurisdictional dimensions. Evidence supporting jurisdictional determinations was recorded on wetland field data forms and depicted in photographs of the project site (Appendices 6, 12, and 13). (Appendix 12 and 13, respectively, contain wetland field data forms and photographs from the 2001 intensified delineation.)

The presence or absence of 3 parameters was assessed to determine if an area was a jurisdictional wetland: 1) hydrophytic vegetation, 2) wetland hydrology, and 3) hydric soils. These parameters are discussed additionally below.

Vegetation

Vegetation communities which meet the criteria of wetland-associated vegetation are dominated by a preponderance (>50%) of species classified as obligate wetland plants (OBL) (estimated probability of occurring in wetlands, >99%), facultative wetland plants (FACW) (estimated probability of occurring in wetlands, 67% to 99%), or facultative plants (FAC) (estimated probability of occurring in wetlands, 33% to 67%) based on the **National List of Plant Species that Occur in Wetlands** (U.S. Fish & Wildlife Service 1988).

Hydrology

Wetland hydrology is indicated by the presence of surficial characteristics or sub-surficial hydric characteristics, showing that "the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively". Surficial hydrology can be determined through visual observation of surface flow, drainage patterns, watermarks, and/or drift lines. Sub-surficial characteristics include saturated soils or presence of free water in the test pit.

Hydric Soils

Hydric soil indicators are present when soils "have formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (United States Department of Agriculture Natural Resources Conservation Service undated). To determine the presence/absence of hydric soils, samples were taken from various depths and were examined for physical and chemical evidence of hydric conditions. The color of excavated soils was evaluated using the chroma index from the Munsell Soil Color Charts (Munsell Color 2000). Low-chroma color or gleyed soils are indicators of hydric soils under normal conditions. Additional indicators of hydric soils such as vertical streaking, high organic matter content in the surface horizon, mottling, and sulfidic odor were also evaluated during the delineation.

JURISDICTION OF WETLANDS AND WATERWAYS

The extent of jurisdictional boundaries was determined according to the ACOE, CDFG, and RPO definitions of wetlands, Non-Wetland Waters, and streambeds.

U.S. Army Corps of Engineers Jurisdiction

Under Section 404 of the Clean Water Act, ACOE has regulatory authority over the discharge of dredged or fill materials into the waters of the United States (33 USC 1344). The term "waters of the United States" is defined in 33 CFR Part 328(a) as: (1) all navigable waters (including all waters subject to the ebb and flow of the tide); (2) all interstate waters and wetlands; (3) all other waters such as intrastate lakes, rivers, streams, (including intermittent streams), mudflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries to waters mentioned above; (6) the territorial seas; and, (7) all wetlands adjacent to waters mentioned above.

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support ... a prevalence of vegetation typically adapted for life in saturated soil conditions". To be considered a jurisdictional wetland under ACOE, all 3 parameters (hydrophytic vegetation, hydric soils, and hydrology) must be met.

Non-isolated drainages or streams that lack one or 2 of the wetland parameters may still be jurisdictional under ACOE as Non-Wetland Waters. In the absence of wetlands and non-tidal waters, the limits of ACOE jurisdiction in drainages and streams extend to the ordinary high water mark (OHWM) which is defined at 33 CFR 328.3(e) as, "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence

of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas".

California Department of Fish and Game Jurisdiction

CDFG regulates alterations of "Streambeds" through the development of a Streambed Alteration Agreement (Agreement) pursuant to Division 2, Chapter 6 of the Fish and Game Code. An Agreement is required whenever a project would "divert, obstruct or change the natural flow or bed, channel or bank of any river, stream or lake designated by the Department".

The breadth of jurisdiction under the CDFG differs from the ACOE in that a "Streambed" is not limited to the OHWM, but rather encompasses the entire width of the streambed, from bank to bank, regardless of the water level. In addition, jurisdictional wetlands under the CDFG only require that one wetland parameter be present, but the wetlands must be associated, within or adjacent, to a streambed. Furthermore, CDFG jurisdiction extends over "adjacent riparian habitat", including riparian habitat supported by a river, stream or lake, even if the riparian area does not necessarily meet the hydrophytic vegetation criteria as defined by the ACOE.

County of San Diego

The County regulates wetlands under the RPO. Under the newly approved, 2007 RPO, the County has defined an RPO jurisdictional "wetland" as lands having one or more of the following attributes:

- At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);
- The substratum is predominantly undrained hydric soil; or
- An ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

The RPO goes on to state, "Notwithstanding the paragraph (1) [above], the following shall not be considered "wetlands":
Lands which have attribute(s) specified in paragraph (1) solely due to man-made structures (e.g., culverts, ditches, road crossings, or agricultural ponds), provided that the Director of Planning and Land Use determines that they:

- Have negligible biological function or value as wetlands;
- Are small and geographically isolated from other wetland systems;
- Are not Vernal Pools; and,
- Do not have substantial or locally important populations of wetland dependent sensitive species.

The RPO also defines a wetland buffer as, "Lands which provide a buffer area of an appropriate size to protect the environmental and functional habitat values of the wetland, or which are integrally important in supporting the full range of the wetland and adjacent upland biological community." In terms of buffer widths, the RPO states that they shall be 50 to 200 feet from the edge of the wetland as appropriate based on the above factors, and where oak woodland occurs adjacent to the wetland, the buffer shall include the oak woodland (not to exceed 200 feet). The RPO regards these buffer areas much the same way as wetlands, by restricting development to only a few permitted uses.

IMPACT ASSESSMENT METHODS

Oak woodland impacts were determined using the methods recommended by County staff (Dickman 2000). All individual mature oak trees found within the development bubble or within 50 feet of the edge of open space were mapped on the vegetation map per the direction of staff (Dickman 2000). This established the location of individual oaks as well as oak woodlands, for subsequent impact evaluation. Standard 6" diameter at breast height (dbh) was used to determine maturity; to quantify impacts, the circumference of each tree's dripline was measured and converted to acreage. The total acreage of individual trees was added the to the oak woodland community acreage. Where an oak woodland or oak riparian forest was present, individual oaks within the woodland area were not initially counted. However, in response to public comments, a count of individual mature oaks (at least 6" dbh) considered impacted was completed in 2006.

Based on review of the site by the lead biologist, some Coast Live Oaks (*Quercus agrifolia*) within the existing development area were assessed to have little biological value (due to their location immediately adjacent to structures, isolation from native habitat, and exposure to on-going human activities). Further impacts to these oaks by the proposed additional development are not expected, thus, they were excluded from the oak woodland impact acreage totals (per County direction, Dickman 2001).

A non-clearance area of at least 100 feet (limited building zone) surrounding the recommended biological open space easements has been incorporated into the recommended easement design. More specifically, no buildings have been located within 100 feet of Dedicated Open Space, thereby avoiding the potential for fire clearing in preserved habitats. While roads lie adjacent to the proposed open space easements in areas, sufficient fire clearing acreage (10 feet or more) lies between the 2. The above, outlined impact assessment methodology should address the potential direct impact of all the proposed facilities within the project site.

For the purposes of quantifying impacts, M&A used an AutoCAD file converted to a GIS readable format (provided by Matalon Architecture and Planning), which outlined the boundary of impacts. Buffer or impact area assumptions, listed below, were based upon information supplied by BRG Consulting, Nasland Engineering, the County, and Matalon Architecture and Planning.

Buffer/Impact Assumptions:

- The area considered impacted included all areas within the "development bubble", as drawn by Matalon Architecture and Planning and displayed on the plans, with the following exceptions: 1) areas of existing development where no change is proposed and no new fire clearing is required (e.g., existing leach fields) were not considered as a new impact; and 2) areas of existing development where Coast Live Oak Woodland occurs within the existing developed area (e.g., between buildings) were not considered impactive to the oaks as a biological resource requiring mitigation (Dickman 2001).
- A minimum 100-foot fire management/brush clearing zone (FMZ) around all proposed buildings, as shown on the plan was considered an impact. The FMZ around existing buildings was considered part of existing conditions, unless the Fire Management Plan called for a greater FMZ width, which was considered a project impact. A 10-foot FMZ around all existing roads was considered to be part of existing conditions except where the roadways were new. For any new road/driveways, the 10-foot FMZ was considered a project impact.
- Oaks within 25 feet of a ground disturbing impact, but outside the development bubble were considered impacted as a result of the development (except along existing roadways); and,

although oaks may not be removed as a result of fire clearing, removal of the understory was considered an impact for oaks and oak woodland that qualify as a biological resource.

- The limits of construction were assumed to be the development bubble as presented on the Proposed Master Plan drawings, except where the bubble incorporates existing development with no proposed change or fire clearing requirements (no new impact); or where a proposed ground altering impact would occur within 25 feet of an oak tree not otherwise considered impacted (oak then considered impacted).
- Impacts associated with installation of a waterline will be confined to within the existing on-site road area where the line runs under the road (Mike Matalon pers. com.). Outside of roadways, installation of the waterline would result in a 6-foot wide direct impact to native vegetation and oaks within 20 feet of the waterline's 6-foot wide direct impact were considered impacted (M. Johnson pers. com. from D. Dickman pers. com.).
- All construction staging areas will be confined to areas considered directly, permanently impacted on the Preferred Site Plan and/or alternative site plans. No temporary staging areas will occur within native or semi-native habitats outside of those areas considered directly, permanently impacted.
- Vegetation between new and existing facilities has been considered impacted where it is expected to be trampled as visitors move between facilities.
- Where staff housing is proposed or exists, an impact footprint that connects the proposed and existing facilities has not been delineated, as there would be no substantial change from existing conditions in terms of foot traffic.
- The plan (all alternatives) currently indicates limited road widening in portions of the site; this limited measure has been incorporated to avoid direct impacts to County wetlands and oaks from road improvements. However, fire clearing in these areas has still been considered impactive to oak woodlands (10 feet out from the road) due to the loss of understory species and the potential loss of replacement oak seedlings.

Indirect impacts were determined based upon the intended use and location of the proposed facilities relative to sensitive biological resources. Indirect impacts were also assessed based on the presence or absence of such features as lighting, roads, fencing, and the likelihood of domestic animal presence.

The cumulative impact analysis was based upon information regarding proposed or approved developments within the surrounding area as provided by BRG Consulting and acquired from the County by M&A.

GENERAL SURVEY LIMITATIONS

Biological inventories are generally subject to various limitations. Depending on the season during which the field survey is conducted, some amphibians, reptiles, migratory birds, mammals, and annual plants may be difficult to inventory. Database [e.g., California Natural Diversity Database (CNDDB) and USFWS GIS database] and literature reviews were performed to compensate for potential limitations.

Biological surveys of the Camp did not include the following:

Site-wide Individual Oak Tree Survey. Surveying and tagging of all on-site oaks was not undertaken. Oak woodlands were mapped where they occurred throughout the project site based on the Holland community definition of Southern Coast Live Oak Riparian Forest and Coast Live Oak Woodland. All individual oaks (mapped outside of an oak woodland but within the project footprint or buffer area) were mapped; then standard 6" dbh was recorded and the canopy of the tree was measured for conversion to acreage. County staff recommended this methodology for the purposes of project impact analysis (Dickman 2000). In addition, in 2006 M&A biologists inventoried all mature oak trees within the impact area (as previously defined in the Impact Assessment Methods section).

Focused surveys for the Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Surveys were not conducted on-site as the Camp habitats do not appear to be suitable for Southwestern Willow Flycatchers and neither a survey nor a habitat assessment was requested by the County. Although other willow flycatcher subspecies may breed in shrubby habitats away from water, the Southwestern Willow Flycatcher breeds only in dense riparian vegetation near surface water or saturated soil (Sogge et al. 1997). Surface water is not known to persist within the Camp into the late spring and summer when the Southwestern Willow Flycatcher is present for breeding. In addition, there are no recent records of this species from the project vicinity.

Indirect impact assessment limitations resulted from the inability to determine impacts to individual Engelmann Oaks (*Quercus engelmannii*), which lie off-site but within 25 feet of the development footprint. Since the adjacent properties are not part of the project area and were not accessed, the species-specific identity of oaks is not known. However, oaks along the edge of the project area could be impacted.

County staff requested a population estimate for sensitive species observed or detected on-site. The current biological investigations are insufficient to provide an accurate quantitative estimate of population size for faunal species. This report calls upon all available information to provide qualitative assessments of on-site populations or the potential for sensitive species occurrence on-site; data on habitat suitability (based on soils, elevation, vegetation present, predator-prey relationships, etc.), natural history information, extrapolations from limited sample sizes, and assessments by local experts were employed. This information is presented to meet County staff requests, but caution should be exercised in using this information for any purposes beyond the current project impact assessment as quantitative population estimates were not the source of the species-specific assessments and the status of a species can change dramatically within a small area over a relatively short time. It is particularly important to recognize that the effects of the Cedar fire on individual populations may not be known for several years.

Relative to the wetland delineation work, in arid regions, such as southern California, wetland hydrology indicators can be difficult to identify. At times it is useful to examine supplemental data such as hydrology reports, groundwater studies, rainfall data, or data from a stream, lake, or tide gauge. Unfortunately, this type of information was not available for the Salvation Army Camp study area. A preliminary hydrology report was prepared for the site (Nasland Engineering 2001); however, it did not contain sufficient data to make assessments regarding hydrology within specific drainages on-site. Lacking recorded information, this wetland delineation survey relied heavily upon field indicators for hydrology such as drainage patterns, inundation, saturation, drift lines, etc. However, because the hydrology field indicators generally coincided with the data gathered for vegetation and soils, the information is expected to be adequate.

The wetland delineation survey was also limited by restricted access. Much of the riparian areas on-site are dominated by Western Poison Oak in the understory. Where large, dense patches of this plant occurred, data points and test pits could not be performed. In these situations, data points were taken as close as possible to the areas being surveyed. Access to other areas of riparian vegetation was restricted by dense vegetation or rugged terrain such as large boulders or steep slopes. No data points were taken from these areas; rather, boundaries were approximated using aerial photography and topography. These locations and boundaries were reviewed in 2007, as previously described in the wetland delineation methods.

EXISTING CONDITIONS

GEOLOGY AND SOILS

The Camp lies within the Foothill Province of north central San Diego County. Topographically, the project vicinity is characterized by steep slopes in the western portions grading into rolling hills and pasture-like areas, which are occasionally bisected by intermittent and ephemeral drainages. The elevation at the site is between approximately 1,300 to 2,000 feet above sea level.

The soil association dominant within the project site is Cieneba-Fallbrook Association, very rocky. The dominant soils on the site belong to the Cieneba Series. The Cieneba Series is characterized by very shallow-to-shallow coarse sandy loams, which are excessively drained. The slopes of this series range from 5 to 75 percent and are often characterized by rock outcrops (Bowman et al. 1973).

A small area within the southwestern portion of the site has been identified as the Friant-Escondido Association, Eroded. The Friant-Escondido Association is represented by metasedimentary soil. Metasedimentary soils are important because they support regionally unique endemic habitats, which are considered particularly sensitive by the resources agencies. The small portion of the site, identified with metasedimentary soils (about 5 acres which includes a small portion of the final hairpin turn on the western hiking trail depicted on the plans and biological resource maps), belongs to a Friant series found on 30 to 70 percent slopes (Bowman et al. 1973).

The soils over a majority of the site also tend to be well to excessively drained, with severe erosion potentials. The drainage and erosion characteristics of these soils are not conducive to holding or ponding water for significant periods of time (Bowman et al. 1973).

VEGETATION COMMUNITIES

Thirteen vegetation categories were delineated on the site: Non-Native Woodland, Disturbed, Urban/Developed, Diegan Coastal Sage Scrub, Southern Mixed Chaparral, Mafic Southern Mixed Chaparral, Coastal Sage-Chaparral Scrub, Non-Native Grasslands, Southern Coast Live Oak Riparian Forest, Mule Fat Scrub, Southern Willow Scrub, Emergent Wetland, and Coast Live Oak Woodland (Figures 2a1-11 2b1-11, 2c1-11 and map index, see inserts at back of report). Extensive areas of rock outcrop are also scattered throughout the site. The approximate acreage of on-site habitats was determined using ArcView 3.2®.

A note regarding the Biological Resources Maps (Figures 2a1-11, 2b1-11, and 2c1-11), the "cross trail" in the southwestern portion of the project site is intended to remain within the existing alignment mapped as disturbed, no change in alignment or additional impacts are proposed. However, due to an AutoCAD (Computer Aided Drawing) error in the original architectural files, the alignment of the trail depicted does not match the actual trail alignment. The remainder of the proposed project elements and existing roadways are properly aligned and it has been concluded that the alignment error is restricted to this single project element. This misalignment does not impact the project impact analysis and is a graphic misrepresentation only.

Vegetation communities are quantified in Table 2, mapped in Figures 2a1-11, 2b1-11, and 2c1-11 (inserted at back), and described in the text following the table.

Table 2. On-site Vegetation Communities

Vegetation Community	Holland and/or Oberbauer Code	MSCP/BMO Tier	Acreage On-site
Non-Native Woodland	11000	IV	4.39
Disturbed Habitat	11300	IV	16.58
Urban/Developed Lands	12000	N/A	7.76
Diegan Coastal Sage Scrub	32500	II	16.43
Southern Mixed Chaparral	37120	III	402.55
Mafic Southern Mixed Chaparral	37122	I	6.48
Coastal Sage-Chaparral Scrub	37G00	II	46.23
Non-Native Grasslands	42200	III	22.83
Emergent Wetland	52440	I	0.03
Southern Coast Live Oak Riparian Forest	61310	I	33.63
Mule Fat Scrub	63310	I	0.02
Southern Willow Scrub	63320	I	0.73
Coast Live Oak Woodland	71160	I	20.34
		Total	**578.00**

Non-Native Woodland

Groves of Eucalyptus trees (Holland 11100) (*Eucalyptus* sp.) and Mission Olives (*Olea europea*) occur within developed portions of the site. Understory plants are generally absent from these stands due to the allelopathic nature of the Eucalyptus trees and current landscaping efforts. Additional non-native tree species include Cypress (*Cupressus* sp.), Juniper (*Juniperus* sp.), California Incense Cedar (*Calocedrus decurrens*), Pine (*Pinus* sp.), and Thread Palm (*Washingtonia robusta*). All of these are located within disturbed or developed portions of the Camp.

Disturbed Habitat

The County has a very restrictive application of "Disturbed Land/Habitat". For the purposes of this report, Disturbed Land/Habitat is limited to "land that has been permanently altered by previous legal human activity including grading and/or repeated clearing for fuel management purposes or shows evidence of being built upon; the land must show evidence that the previous disturbance has eliminated all future biological value of the land; no natural vegetation remains; the land does not have value for sensitive wildlife, including foraging potential for raptors; and the site shows evidence of building foundations, past grading or domestic animal use that has removed its capability as a potential viable habitat" (Dickman 2000).

Disturbed habitats on the site include the areas around the existing development that have been historically cleared or brushed and are maintained through a similar regime, as well as areas that were more recently grubbed or cleared. These areas are comprised of maintained dirt roads. The areas mapped as Disturbed do not include the Non-Native Grasslands associated with existing development or areas. [Per County staff's request, areas cleared for percolation testing are mapped as the habitat present prior to disturbance.]

Urban/Developed Lands

Portions of this site are occupied by residences and Camp facilities, as well as roads, and parking areas. Exotic, ornamental plantings are associated with this development.

Diegan Coastal Sage Scrub

Diegan Coastal Sage Scrub includes a dominance of low, soft-woody sub-shrubs that are typically drought deciduous. California Sagebrush (*Artemisia californica*) and Flat-top Buckwheat (*Eriogonum fasciculatum*) are most common with significant incursions of Laurel Sumac (*Malosma laurina*) and White Sage (*Salvia apiana*). The Diegan Coastal Sage Scrub understory includes Coastal Deerweed (*Lotus scoparius* var. *scoparius*), Caterpillar Phacelia (*Phacelia cicutaria* var. *hispida*), and non-native grasses. Sage scrub occurs in the Camp's southeastern region, the central eastern region, and to a lesser extent in the northeast.

Southern Mixed Chaparral

In general, this habitat can be described as a relatively tall (1.5-3 m) plant community dominated by broad-leaved, deep-rooted, woody shrubs. It occurs on dry, rocky, often steep slopes with sparse soils. Shaded north-facing slopes are generally where the densest vegetation occurs, while south-facing slopes are more open. Chaparral dominates the higher elevations on the Camp. Prior to the Cedar Fire, a dense impenetrable canopy was formed by woody shrubs such as Scrub Oak (*Quercus berberidifolia*), Mission Manzanita (*Xylococcus bicolor*), Chaparral Whitethorn (*Ceanothus leucodermis*), Holly-leaf Cherry (*Prunus ilicifolia* ssp. *ilicifolia*), and Chamise (*Adenostoma fasciculatum*); however, the Cedar Fire decreased chaparral shrub density throughout the Camp. Included in this vegetation are infrequent individual Coast Live Oaks, as well as Our Lord's Candle (*Yucca whipplei*), Spanish Bayonet (*Yucca schidigera*), Climbing Bush Penstemon (*Keckiella cordifolia*), and Blue Elderberry (*Sambucus mexicana*). Occasionally within the understory of the chaparral, are herbaceous species such as California Peony (*Paeonia californica*) and Pacific Sanicle (*Sanicula crassicaulis*).

Mafic Southern Mixed Chaparral

Southern Mixed Chaparral accounts for most of the on-site chaparral, but it is replaced in some of the higher elevations with Mafic Southern Mixed Chaparral. This subtype is typically differentiated from Southern Mixed Chaparral based upon soil type, as floristic distinctions between subtypes are not clearly defined. The Friant soils, which are known to support Mafic Southern Mixed Chaparral species, were not mapped in all of the Camp areas delineated as Mafic Southern Mixed Chaparral (Bowman et al. 1973). However, Soil Conservation Service maps are gross in nature and may not reflect smaller scale soils variations. For the purposes of this report, portions of the on-site chaparral habitat were designated as Mafic Southern Mixed Chaparral due to the presence of plant species typically associated with the soils, which support Mafic Southern Mixed Chaparral. In response to County staff comments, the on-site area mapped as Mafic Southern Mixed Chaparral was reduced, to more closely follow the pattern of plant species associated with this vegetation community.

Coastal Sage-Chaparral Scrub

A mix of sclerophyllous, woody chaparral species and drought-deciduous, malacophyllous sage scrub species characterize this habitat (Holland 1986). Areas mapped as chaparral scrub on-site

contain predominately chaparral associated species with irregular sage scrub species presence. This intermediate or ecotonal vegetation type is generally a post-fire successional community; however, it may also develop in tracts with shallow soils. Shallow soil areas may not adequately support chaparral-associated species and sage scrub species will occupy remaining open areas. This community occurs throughout the Camp, intermixed with swathes of chaparral and sage scrub.

Non-Native Grasslands

Non-Native Grasslands are well distributed in the central portion of the site. Such communities develop most commonly where native scrub has been disturbed by grazing, discing, or fire. As on-site, they usually occur in close association with rural land uses.

Local grasslands have a preponderance of non-native grasses and forbs, such as the bromes (*Bromus* spp.) and slender wild oat (*Avena barbata*), with only occasional representation from native elements. On-site Non-Native Grasslands are limited in size and are disturbed on an on-going basis through mowing.

Emergent Wetland

Herbaceous wetland occupies isolated portions of Non-Native Grasslands, which appear to have been historically disturbed. These areas are further described within the Wetland Delineation results section.

Southern Coast Live Oak Riparian Forest

Oak woodlands with Coast Live Oaks with scattered large Western Sycamores (*Platanus racemosa*) are concentrated within drainages on the Camp property forming bands of Southern Coast Live Oak Riparian Forest. Oaks within the riparian corridor are typically mature trees. The density of the riparian oaks was decreased by the Cedar Fire, but they continue to form a riparian forest. Where streambeds underlie the oak canopy, a lush understory occurs. The locally dominant plant is Western Poison Oak (*Toxicodendron diversilobum*), but Holly-leaf Redberry (*Rhamnus ilicifolia*), Yellow Wood-Sorrel (*Oxalis corniculata*), and Ripgut Grass (*Bromus diandrus*) also occur.

Mule Fat Scrub

This riparian community is characterized by Mule Fat (*Baccharis salicifolia*). It typically persists along intermittent stream channels with fairly coarse substrate and moderate depth to the water table (Holland 1986). On-site, this habitat occurred at one location, near the base of the "cross trail", where a small area of wetland was surrounded by non-native grasses and other species indicative of disturbance to the northeast and Southern Mixed Chaparral to the west. However, following the Cedar Fire, this habitat did not recover; nevertheless, it remains mapped as Mule Fat Scrub for the purposes of this analysis. Additional descriptions of this and other wetland habitats on-site are found within the Wetland Delineation section.

Southern Willow Scrub

Southern Willow Scrub consists of broad-leafed, winter-deciduous riparian thickets dominated by several *Salix* species (Holland 1986). There is typically little to no understory component within this community. Southern Willow Scrub occupies portions of the West Fork drainage and was found at

the location previously proposed for the southern-most pond, although it no longer persists their as a community, following the Cedar Fire. However, following the Cedar Fire, Southern Willow Scrub has grown up within a drainage northwest of the existing cabin complex where a Non-Wetland Water polygon dominated by Non-Native Grassland was previously mapped. The longterm viability of this area of willow scrub is unknown, but it is mentioned herein as it lies within open space that will be subject to management.

Coast Live Oak Woodland

Excellent stands of Coast Live Oak Woodland with 2 species of large oaks occur on the site. Coast Live Oaks are the dominant component of the habitat, which occupies the flatter meadows. In addition, Engelmann Oaks are interspersed with Coast Live Oaks throughout the Camp. These trees are not ornamental but native.

Near the existing Camp facilities, the habitat surrounding the oaks has been degraded as a result of historic and existing land uses. Away from existing facilities, sage scrub, chaparral, and non-native grasses typically surround oaks. A mixture of shrubs, annual grasses, and leaf litter comprises the understory in such areas. Deergrass (*Muhlenbergia rigens*), a robust, clumping bunchgrass, occurs at scattered low-lying swales, while Blue Wild Rye (*Elymus glaucus*) is occasional throughout the woodlands. Purple Clarkia (*Clarkia purpurea*) is widespread, particularly in areas of partial shade.

Rock Outcrops

Large boulders, rock slabs, and outcrops are a dominant characteristic of the landscape and merit special discussion. In the chaparral, rocky areas create unvegetated islands that are used by species that may not otherwise occur in dense vegetation. Rock outcrops increase habitat heterogeneity, which is positively correlated with species diversity. Saxicolous species such as silver-leaf lotus (*Lotus argophyllus* var. *argophyllus*), California figwort (*Scrophularia californica* ssp. *Floribunda*), Ladies-Fingers (*Dudleya edulis*), Red-skin Onion (*Allium haematochiton*), and Bigelow's Mossfern (*Selaginella bigelovii*) were all associated with rock outcrops on the site.

WETLAND DELINEATION RESULTS

Physical Characteristics and Soils

Soils types identified on-site were previously discussed. None of the soil types identified on-site are listed as hydric soils by the United States Department of Agriculture - Soil Conservation Service. However, according to the same list, there is an unnamed inclusion within Visalia Sandy Loam that is considered a hydric soil if it meets specified criteria (USDA-Soil Conservation Service 1992). The soils sampled during the survey did not meet these criteria.

Wetlands, Jurisdictional Non-Wetland Resources, and other Areas Surveyed

Figures 2a1-11, 2b1-11, and 2c1-11 depict the ACOE, CDFG, and RPO jurisdictional wetlands and Non-Wetland Waters/Streambeds on-site along with the Preferred Plot Plan, Reduced Alternative I, and Reduced Alternative II, respectively, in compliance with the County Mapping Requirements. The wetland data points, photo points, and the jurisdictional wetland resources are also depicted on a smaller scale in Figure 3. Figure 3 supplements Figures 2a1-11, 2b1-11, and 2c1-11, and unlike these figures is not intended to meet the mapping requirement standards that those figures meet. Figure 3 provides a simplified view of the on-site jurisdictional resources.

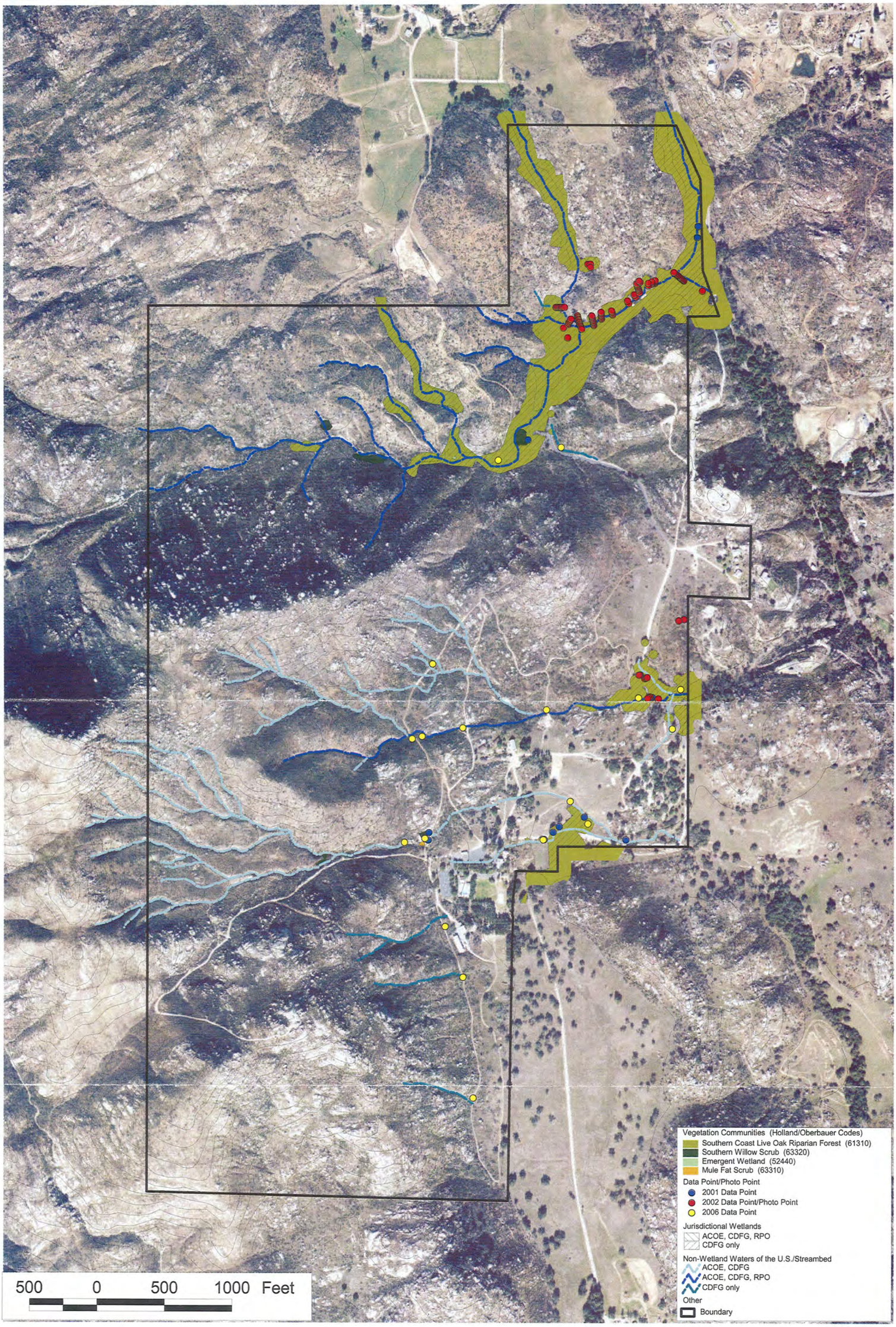
Non-Wetland Waters/Streambed and 4 wetland or wetland-associated vegetation types (Southern Coast Live Oak Riparian Forest, Southern Willow Scrub, Mule Fat Scrub, and Emergent Wetland) have been mapped on the Camp. The following table (Table 3) provides a summary of acreages of jurisdictional wetlands and Non-Wetland Waters/Streambeds.

Table 3. Acreages of Jurisdictional Wetlands, Non-Wetland Waters of the U.S., and Streambeds

Jurisdictional Areas	ACOE Jurisdictional Acreage	CDFG Jurisdictional Acreage	County RPO Jurisdictional Acreage[1]	Total Acreage
Southern Coast Live Oak Riparian Forest (SCLORF)[2]	0.00	33.56	0.00	33.56
Southern Willow Scrub[2]	0.73	0.73	0.73	0.73
Mule Fat Scrub[2]	0.02	0.02	0.02	0.02
Emergent Wetland[2]	0.03	0.03	0.03	0.03
Total Wetland Acreage[2]	**0.78**	**34.34**	**0.78**	**34.34**
Non-Wetland Waters/Streambed[3]	4.59	4.75	2.82	4.75
Total Jurisdictional Acreage (acre)	**5.37**	**39.09**	**3.60**	**39.09**

[1]Pursuant to the 2007 RPO definition of wetlands
[2]Does not include the underlying Non-Wetland Waters/Streambed, which lack the vegetative wetland component, and are quantified in the lower portion of the table and totaled at the bottom
[3]Includes all Non-Wetland Waters/Streambed separate from the surrounding vegetation community

M&A #99-051-22



Wetland Delineation Data Points, Photo Points, Jurisdictional Wetlands, and Non-Wetland Waters of the U.S./Streambed

Salvation Army Divisional Camp and Retreat

Figure 3

Merkel & Associates, Inc.

Southern Coast Live Oak Riparian Forest

Most of the Southern Coast Live Oak Riparian Forest on-site is dominated by non-wetland-indicator species such as Coast Live Oak, Western Poison Oak, Holly-leaf Redberry with Yellow Wood-Sorrel, and Ripgut Grass in the understory. Although a few FAC, FACW, and OBL species are present, including Bristly Ox-tongue (*Picris echioides*), Western Sycamore, and Lance-leaf Willow (*Salix lucida* ssp. *lasiandra*), they are not, in most cases, present in such abundance that would satisfy the hydrophytic vegetation criteria. Despite the lack of wetland vegetation, this riparian vegetation community occurs along drainages/streambeds and is, therefore, considered jurisdictional "Adjacent Riparian" habitat by CDFG.

A few areas of Southern Coast Live Oak Riparian Forest, located within the northeastern portion of the property, have sufficient hydrophytic vegetation, and are mapped as jurisdictional wetlands.

The hydrology indicator beneath the Southern Coast Live Oak Riparian Forest consists of incised, cobble-lined channels. Neither water nor sign of water was present in some drainages during any of the wetland delineation surveys. This made the determination of hydrology limits problematic. CDFG jurisdiction was measured from bank to bank, while both ACOE and County jurisdictions were limited to the ordinary high water mark, which was approximated using the width of the channel bed and/ or the width of the cobble within the channel.

Sandy loam is the predominant soil structure beneath the Southern Coast Live Oak Riparian Forest canopy. No hydric indicators and no evidence of saturation were found in these soils during the time of the survey.

Southern Willow Scrub

The on-site Southern Willow Scrub areas are dominated by Lance-leaf Willows, which is an obligate wetland species and contain Fremont Cottonwood (*Populus fremontii*), Mule Fat, Western Sycamore, and Mugwort (*Artemisia douglasiana*), which are all facultative wetland species. Areas of Southern Willow Scrub also exhibit hydrology (drainage patterns) and hydric soil indicators.

A small stand of Southern Willow Scrub occurs adjacent to the area where the westernmost proposed "refurbished pond" was formerly planned (it is no longer a component of the project). The habitat consists of Fremont Cottonwood, Mule Fat, Lance-leaf Willow, and Red Brome (*Bromus madritensis* ssp. *rubens*). Although the area meets both the hydrophytic vegetation and hydrological criteria, it is lacking the hydric soil indicators found in other areas of Southern Willow Scrub on site. However, the surrounding area appears to have been subject to significant disturbance, which is indicated by the placement of fill soils and cobble into this basin shaped area. Because the area has been altered, this stand of Southern Willow Scrub is deemed an atypical situation, and is, therefore, jurisdictional under ACOE. Portions of the areas previously delineated as jurisdictional willow scrub did not recover following the Cedar Fire; however, the original jurisdictional mapping has been utilized for the purposes of this project analysis.

Mule Fat Scrub

The on-site Mule Fat Scrub was dominated by Mule Fat and Nievitas Cryptantha (*Cryptantha intermedia*). The Mule Fat Scrub also contained non-native upland species in the understory such as Red Brome, filaree (*Erodium* sp.), and Short-pod Mustard (*Hirschfeldia incana*) that do not represent

hydrophytic vegetation. The stand of Mule Fat is within the disturbed area that is described in the above text. Hydrological characteristics are exhibited, but the other parameters are lacking. Due to the disturbed nature of this area, it is deemed an atypical situation, and is jurisdictional under ACOE, CDFG, and the County. As noted earlier in the report, this stand of mule fat scrub has not recovered from the Cedar Fire, but the jurisdictional area stands as originally mapped.

Emergent Wetland

Vegetation typical of the Emergent Wetland within the study site includes Common Monkeyflower (*Mimulus guttatus*), Grass Poly (*Lythrum hyssopifolia*), Soft Chess (*Bromus hordeaceus*), and Pale Spike-Sedge (*Eleocharis macrostachya*). The dominance of facultative wetland and obligate wetland species indicate hydrophytic vegetation in these areas. The stands of Emergent Wetland exhibit signs of hydrology, predominantly in the form of drainage patterns in wetland areas. Soil samples from test pits revealed indicators of hydric soils that are present in these areas.

RPO Wetlands

Passed in 2007, Ordinance No. 9842 (New Series), An Ordinance Codifying And Amending The Resource Protection Ordinance, Relating To Wetlands, Prehistoric And Historic Sites, Agricultural Operations, Enforcement, And Other Matters, revised the 1991 County RPO definition of a "wetland". The revised definition of a wetland is less inclusive than the 1991 RPO definition. As a result, some areas previously delineated as County jurisdictional wetlands may no longer qualify as RPO wetlands and may not be subject to the RPO development restrictions within wetlands and wetland buffers. Specifically, under the 1991 RPO, lands whose "substratum is non-soil and is saturated with water or covered by water at some time during the growing season of each year" would qualify as RPO wetlands. Under the revised 2007 definition of a wetland, such lands must support an ephemeral or perennial stream, whose substratum is predominately non-soil **and such lands must contribute substantially to the biological functions or values of wetlands in the drainage system**. Thus, the updated definition of a wetland is based not solely on form but on functions and values.

In the case of the Camp, the majority of the areas previously delineated as County RPO jurisdictional wetlands meet the 2007 definition of a wetland (based on the presence of hydrophytic vegetation or their contributions of the functions and values of the drainage system). In contrast, 2 areas previously delineated as RPO wetlands do not qualify as wetlands under the 2007 definition. The Central Camp Tributary Drainage and Southern Camp Drainages contain ephemeral drainages within the existing camp use area. These drainages lack hydrophytic vegetation, are not part of a wildlife corridor, and do not support any sensitive species. In terms of functions and values, these are narrow drainages that lack herbaceous vegetation within the channel; thus, they tend to flow quicker, yielding significantly less groundwater recharge, sediment retention, toxicant retention, and nutrient transformation. These drainages, thus, have low physical and chemical functions. In addition, the Southern Camp Drainages lack connectivity, precluding any substantial contributions to the drainages system.

The Central Camp Tributary Drainage and Southern Camp Drainages function solely to convey water from higher elevation lands in the west eastward, in some cases connecting with lower drainages; however, this function is the result of topography and is not dependant upon the specific morphology of the drainage. The water flow of the site's western hills will continue to flow eastward regardless of the presence or absence of these small, unvegetated channels; thus, their conveyance of water does

not qualify as a substantial contribution to the biological functions or values of wetlands in the drainage system. They support a purely physical function, which is not dependent upon their presence, but simply reflects the path of least resistance for water flow. Absence of these drainages (while not proposed by the project) would not prevent flow of water eastward into the drainage system.

Having analyzed the conditions of the drainages on-site, the Central Camp Tributary Drainage and Southern Camp Drainages do not qualify as County wetlands pursuant to the 2007 RPO.

Non-Wetland Waters of the U.S./Streambed

Non-Wetland Waters are composed primarily of incised drainages of varying width that lack hydrophytic vegetation and/or hydric soil indicators. A majority of the Non-Wetland Waters found on-site consist of the drainages that run beneath the Southern Coast Live Oak Riparian Forest. Hydrology within some drainages is indicated by occasional drift lines, sediment deposits, or exposed root systems of adjacent trees where the banks had eroded. The lack of watermarks and drift lines outside of these incised drainages indicates that the ordinary high watermark does not rise above the depth of the channel. Some drainages lacked signs of water, which made the determination of hydrology limits problematic. In these cases, CDFG jurisdiction remained from bank to bank, while both ACOE and County jurisdictions were limited to the width of the channel bed and/ or the cobble within the channel. The soils within the streambeds that underlie Southern Coast Live Oak Riparian Forest consist of cobble or rock. These areas could not be sampled due to the impenetrability of the substrate. It is possible that sediment deposits between the cobble satisfy hydric conditions; however, this could not be determined. In these cases, soils are considered to be natural atypical situations, and the presence of hydric soils is assumed, but due to the lack of hydrophytic vegetation these areas remain Non-Wetland Waters/Streambeds.

The additional wetland delineation work conducted in November 2000 revealed a disturbed area that was previously mapped as Non-Wetland Waters. The disturbance consisted of what appeared to be the placement and compaction of fill material into approximately 0.006 acre of Non-Wetland Waters (not RPO jurisdictional). This one-foot wide disturbed drainage is located in the eastern portion of the property, approximately 800 feet east of the main parking lot. A portion of the drainage originally ran beneath a stand of Southern Coast Live Oak Riparian Forest; however, no wetland-associated vegetation actually existed within the drainage, and no impacts to wetland vegetation occurred as a result of this disturbance. This acreage has been included in the impact analysis for the project.

Diegan Coastal Sage Scrub

In the northeastern portion of the property, relatively small inclusions of Diegan Coastal Sage Scrub are interspersed within breaks of the Southern Coast Live Oak Riparian Forest canopy. Although not a wetland vegetation community, data points were also performed in these areas, because they could potentially contain wetland characteristics, as they are directly adjacent to riparian habitat and the associated drainage system.

These areas almost entirely consist of upland vegetation including Flat-top Buckwheat and non-native grasses like Ripgut Grass and Soft Chess. The only wetland parameters (hydrology and assumed hydric soils) found within the Diegan Coastal Sage Scrub occur in the drainage/streambed, which has been addressed above under Non-Wetland Waters/Streambeds.

Non-Native Grassland

A0.38-acre area classified as Non-Native Grassland occurs immediately adjacent to Southern Coast Live Oak Riparian Forest in the northeastern portion of the property. It is located in a low-lying area, north of the West Fork of San Vicente Creek at the base of a hill. Although the area consists completely of non-wetland indicator species, such as Milk-thistle (*Silybum marianum*) and Radish (*Raphanus sativus*), it appears to have more mesic conditions; therefore, data points were also performed throughout the vegetation.

Neither hydric soil indicators nor hydrology indicators were found in this vegetation community during the time of the survey. The soils in this area were mildly moist but not saturated even at depths of 14 inches, indicating the absence of a high groundwater table. A portion of this area is proposed as a wetland creation/mitigation site.

Wetlands Functions and Values

The on-site wetland habitats mostly consist of dense, continuous Southern Coast Live Oak Riparian Forest, which is a relatively high quality habitat. Although the majority of this habitat lacked the necessary hydrophytic vegetation characteristics to be considered ACOE jurisdictional wetlands, it is nonetheless considered to be high quality wildlife habitat. This vegetation community provides a multi-layer canopy, which supports common riparian birds such as Song Sparrow (*Melospiza melodia*), Lesser Goldfinch (*Carduelis psaltria*), Yellow-rumped Warbler (*Dendroica coronata*), and Common Yellowthroat (*Geothlypis trichas*). Additionally, the smaller ponding areas and abundance of leaf litter may provide breeding habitat for various amphibian species including the Pacific Treefrog (*Pseudacris regilla*), and Western Toad (*Bufo boreas*). The tall heights of the Coast Live Oaks, Western Sycamores, and occasional willows are indicative of a mature, well-developed riparian system.

Overall, the on-site wetlands and waterways have varied physical and chemical functions. The high functions are mostly attributed to the areas of the drainage that run beneath the Southern Coast Live Oak Riparian Forest. The herbaceous vegetation in the understory and the widening of the drainage allows for better groundwater recharge, sediment retention, toxicant retention, and nutrient transformation. The sediment and toxicant retention of these areas improves the conditions of the areas downstream by reducing sediment loading. However, most of the upstream portions of the on-site waterways consist of narrower drainages that lack herbaceous vegetation within the channel. Waters in these drainages tend to flow quicker, yielding significantly less groundwater recharge, sediment retention, and nutrient transformation. Thus, these drainages have lower physical and chemical functions. The functions and values of intermediate areas along the drainage, including small pockets of Southern Willow Scrub and Mule Fat Scrub have moderate functions and values, as they provide herbaceous wetland vegetation that assists with sediment retention, toxicant retention, and nutrient transformation, but are too small to effectively provide high levels of retention or transformation or much groundwater recharge. The functions and values of the various wetland resources on-site are addressed further within the subsequent Wetland Buffers section.

Although the Diegan Coastal Sage Scrub and Non-Native Grassland habitats on-site lack wetland characteristics, these areas, particularly the Non-Native Grassland, offer considerably potential for wetland mitigation sites. These areas occur along the same drainage system and have generally the same soil composition as the neighboring riparian habitat. The Non-Native Grassland is especially suited for wetland mitigation, because it occurs in a low-lying area, which appears to be more mesic

than surrounding upland habitats. Although this area is classified as a Non-Native Grassland according to the County's habitat identification information (County of San Diego, Department of Planning and Land Use 2001), it contains no grasses, only invasive, exotic forbs, which are too dense and tall to provide quality raptor foraging habitat. The biological value of this area would increase if the existing vegetation were replaced with native, wetland/ riparian species.

Wetland Buffers

The on-site wetland buffers have been revised from those originally proposed to meet the 2007 RPO. The County Mapping Requirements' wetland buffer factors have been assessed for each of the on-site wetlands. Summary of the analysis, along with resulting buffer widths, are provided within the table below according to location within the Camp and the wetland type (i.e., drainage, riparian scrub, emergent wetland...).

Table 4. Buffer determination factors and wetland buffer widths

Location/ Description	Hydrophytic Vegetation	Wildlife Corridor	Sensitive Species	Condition/ Quality	Connectivity	Buffer Width
West Fork of San Vicente and Tributary Drainages	No (see wetland habitats below)	Yes	Yes	Low to Moderate	Yes	100 feet from centerline
West Fork of San Vicente Jurisdictional Riparian Forest	Yes	Yes	Yes	High	Yes	100 feet from edge of habitat
West Fork of San Vicente Southern Willow Scrub	Yes	Yes	No	Moderate	Yes	50 feet from edge of habitat
Central Camp Primary Drainage	No	No	Yes	Moderate	Yes	50 feet from centerline
Central Camp Southern Willow Scrub	Yes	No	No	Low	Yes	50 feet from edge of habitat
Central Camp Emergent Wetland	Yes	No	No	Low	Yes	50 feet from habitat edge
Southern Camp Riparian Scrubs	Yes in the western portion of the drainage, but area just north of the Cross Trail Base did not recover after the Cedar Fire	No	No	Low	Yes	50 feet from habitat edge in western Southern Willow Scrub location; no buffer where the habitat did not recover post-fire
Southern Camp Emergent Wetland	Yes	No	No	Low	Yes	50 feet from habitat edge

FLORA

A total of 288 species of plants were found at the Camp, of which, 64 are non-native (Appendix 1). This substantial floristic diversity reflects the variety of habitats and microhabitats present, the relatively large size of the property, and the intermediate geographic location of the site between the coast and higher mountains. Habitat value and floristic diversity on-site are considered excellent. Undisturbed areas beneath the oak canopy are particularly productive in terms of botanical diversity, and sensitive species were particularly well represented within Mafic Southern Mixed Chaparral at higher elevations.

ZOOLOGICAL RESOURCES

Wildlife Habitat

The value of an area to wildlife is primarily dependent on physical and biological factors. Other important factors include the location relative to other land uses, the quality of habitat on and adjacent to the area, and the uniqueness of the habitat within a regional context. The size of the Camp provides a mosaic of suitable habitat niches, which would be expected to support a great diversity of native wildlife on the site. Similarly, drainages and ridges, which pass through the site, provide corridors for wildlife movement that would contribute to the diversity of fauna on the site. Finally, the confirmed presence of native predators, such as Bobcat (*Lynx rufus*) and Coyote (*Canis latrans*), and potential use of the property by Mountain Lion (*Puma concolor*) are expected to help maintain the balance of the local ecosystem, supporting species diversity and abundance.

Diegan Coastal Sage Scrub, Coastal Sage-Chaparral Scrub, chaparral, and oak woodlands are extremely valuable to native fauna. Disturbed or non-native habitats, such as Eucalyptus Woodlands, Non-Native Grasslands, and agricultural areas, provide foraging, wintering, and even breeding habitat for some bird, small mammal, and reptile species. Developed and adjacent agricultural areas, though more highly disturbed, also add to the vegetative diversity of the site. Although not delineated as a separate habitat type, rock outcrops are a topographic feature essential to some wildlife species.

Chaparral and Rock Outcrops

Chaparral (Southern Mixed Chaparral and Mafic Southern Mixed Chaparral) provides habitat for a variety of mammalian and avian species. Small rodents are important elements of the chaparral fauna; however, this habitat plays an equally important role to large species including the Mountain Lion. A number of species of birds forage among the leaf-litter, including the California Thrasher (*Toxostoma redivivum*), California Towhee (*Pipilo crissalis*), and Spotted Towhee (*Pipilo erythrophthalmus*). During the winter months, Hermit Thrush (*Catharus guttatus*) may utilize the leaf litter found beneath areas of mature shrub cover for foraging. More specifically, on-site chaparral habitats support several sensitive plant species, increasing their sensitivity.

Areas with extensive amounts of rock, particularly relatively undisturbed slopes or peaks, are habitat for reptiles, provide roost sites for bats, and perch sites for raptors. Large rock outcroppings may provide habitat for the Granite Night Lizard (*Xantusia henshawi*), a species dependent on such features.

Coastal Sage-Chaparral Scrub

The functions and values of this habitat type are comparable to on-site chaparral. It is occupied by the Dusky-footed Woodrat (*Neotoma fuscipes*) and may provide habitat for whiptail lizards and numerous snake species. These areas of intergrade are not expected to support California Gnatcatchers due to the predominance of chaparral species.

Diegan Coastal Sage Scrub

The limited tracts of Diegan Coastal Sage Scrub present exhibit a rather open, low profile that is ideal for whiptail lizards, horned lizards, and a variety of snakes. Vegetation that is more substantial and may be capable of supporting California Gnatcatchers is also present at a few locations, although California Gnatcatchers have not been identified on-site during M&A focused or general surveys and are not known from the immediate region. Typically, many species found in chaparral habitats will also utilize sage scrub.

Coast Live Oak Woodlands and Southern Coast Live Oak Riparian Forest

Oak woodland (Coast Live Oak Woodland and Southern Coast Live Oak Riparian Forest) is a strategically important habitat for many vertebrate species. Of the 632 terrestrial vertebrates native to California, over half (331) use oak woodlands, still other species may occupy oak habitats intermittently during migration (Giusti and Tinnin 1993). Oak woodlands may be considered a "keystone habitat", as they are essential to a wide variety of plants and animals.

Habitat diversity typically influences wildlife abundance. Plant density, composition, age structure, and cover within and adjacent to woodlands affect habitat diversity, (which may be measured by the degree of vertical and horizontal habitat structure). Oak woodlands are composed of several vertical layers including canopy, shrub, herb, and ground. In contrast to many other tree species, oaks have a greater proportion of biomass in branches (canopy), which provides a network of feeding and hiding sites for wildlife (Giusti and Tinnin 1993). Woodland overstory provides valuable roosting, foraging, and breeding areas, while the understory is utilized by foraging birds and mammals. The trees themselves provide extensive foliage and bark surface for foraging, insectivorous birds. Although overall wildlife diversity is generally greater where vertical vegetation structure is well developed, species-specific occurrence can frequently be linked to the quality or presence of one component of the vertical structure. Several components within oak woodlands are of particular value to wildlife, among these are riparian areas, cavity trees, downed woody debris, and acorn trees.

Riparian areas usually harbor greater wildlife diversity and abundance than upland areas. Riparian habitat, represented on-site as Southern Coast Live Oak Riparian Forest, can be an important breeding habitat for a number of species of migratory birds. Many vertebrates predominantly utilizing peripheral habitats, such as Southern Mixed Chaparral, also utilize riparian habitats to varying degrees. A number of birds are expected to forage in the insect rich, riparian forest habitat.

Cavity trees provide shelter and breeding sites for avian and mammalian species. Abandoned woodpecker holes and natural cavities which form in large oaks can be important nesting sites, not only for woodpeckers, but for secondary cavity nesting species such as Oak Titmouse (*Baeolophus inornatus*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Western Bluebird (*Sialia mexicana*), wrens, and Western Screech Owl (*Otus kennicottii*). For secondary cavity nesters the presence of existing cavity trees may be a limiting factor.

Downed woody debris affords a moist environment and is an important habitat component for amphibians and reptiles. Fallen oak logs and the leaf litter under large trees support diverse invertebrate faunas; various species of amphibians, reptiles, small mammals, and birds forage in these areas. Arboreal Salamanders (*Aneides lugubris*) will also estivate in deep cavities in live oaks during the summer dry season.

Finally, acorns not only allow for oak regeneration, but many wildlife species are dependent upon them as a food source. Some oaks are better acorn producers than others are and the wildlife value of an individual tree may be in part attributable to the tree's acorn production capacity. Acorns provide a rich food source for many species including woodpeckers, quail, jays, Mule Deer (*Odocoileus hemionus*), and woodrats.

Wetlands and Riparian Habitats

On-site wetland habitats, other than the jurisdictional stands of oak riparian forest, are restricted to pockets of riparian scrub and emergent wetland. Although they may not significantly enhance wildlife habitat for wetland dependent species, due to their limited size and isolation, they increase the biological diversity of the site. Species that may utilize these areas include Common Yellowthroat and Song Sparrow.

While some riparian areas may not be delineated as jurisdictional wetlands, they may be essential to local plants and animals. For example, riparian ecosystems provide permanent as well as temporary habitat to many terrestrial organisms (see previous oak woodland riparian component discussion). They also provide primary movement corridors. Riparian ecosystems benefit a variety of species through their value as habitat, their highly productive vegetation, and their ability to buffer the effects of organic nutrients and toxins (Peck 1993).

Non-Native Woodlands

Exotic trees may enhance nearby native woodlands, and some non-native trees provide perch and nest sites for raptorial and passerine species. However, they do not generally provide noteworthy resources to native vertebrates. No raptor nests were located within the on-site Non-Native Woodlands.

Non-Native Grasslands

On-site Non-Native Grasslands support gophers, ground squirrels, and other small mammals. They may be of modest foraging value to raptors, such as Red-shouldered Hawk (*Buteo lineatus*) and Red-tailed Hawk (*Buteo jamaicensis*). These grasslands are not known to support sensitive plant species.

Disturbed

Disturbed locations support fewer species of native vertebrates compared to more pristine, native habitats found at the Camp. However, a few species such as the California Ground Squirrel (*Spermophilus beecheyi*) are abundant in on-site Disturbed areas. Granivorous birds, such as the White-crowned Sparrow (*Zonotrichia leucophrys*) can be abundant during the winter months in weedy areas.

Fauna

A checklist of animal species detected on-site by M&A biologists is provided as Appendix 2. The Appendix 2, Faunal Checklist, does not include species detected on-site during investigations conducted by sub-consultants [e.g., Stephen's Kangaroo Rat Trapping] as these observations are addressed within the attached sub-consultant reports and were not made by M&A biologists. Most species found on-site are discussed below, along with species not detected, but expected to occur, on-site.

Butterflies

Pacific Orange-tip (*Anthocharis sara*), Desert Orange-tip (*Anthocharis cethura*), Coastal Green Hairstreak (*Callophrys* dumetorum), Gray Hairstreak (*Strymon melinus*), Funereal Duskywing (*Erynnis funeralis*), Behr's Metalmark (*Apodemia virgulti*), Silvery Blue (*Glaucopsyche lygdamus*), California Sister (*Adelpha bredowii*), Mourning Cloak (*Nymphalis antiopa*), Lorquin's Admiral (*Limenitis lorquini*), West Coast Lady (*Vanessa anabella*), Common Ringlet (*Coenonympha tuilla*) and Gabb's Checkerspot (*Chlosyne gabbii*) were all observed on-site. Western Tiger Swallowtail (*Papilio rutulus*) and Pale Swallowtail (*Papilio eurymedon*) were also observed on-site, specifically, within riparian habitats.

Focused surveys for the Quino Checkerspot Butterfly were conducted on-site in 2001. The results of the surveys were negative. Additional details regarding survey results are discussed in the Focused Sensitive Resource Surveys section and Appendix 11.

Although not detected on-site or reported from the immediate area in the CNDDB (2006), the (Harbison's) Dun Skipper (*Euphyes vestris harbisoni*) has potential to occur on-site based on the presence of its host plant, San Diego Sedge (*Carex spissa*).

Amphibians

No amphibians were found on the site during M&A fieldwork; however, nocturnal investigations of riparian habitats were not conducted. The Pacific Treefrog and Western Toad are expected to occur on-site. The Arboreal Salamander, Large-blotched Ensatina (*Ensatina eschscholtzi klauberi*), and Garden Slender Salamander (*Batrachoseps major major*) may occur in the oak woodlands and/or the heavier-canopied chaparral. The presence of fallen logs, sporadically found in the woodland understory along the primary drainages at the Camp, is an important microhabitat for these species. Lastly, Western Spadefoot (*Spea hammondii*) may occur within on-site habitats. Although spadefoot breeding habitat typically consists of temporary ponding water, and suitable breeding habitat was extremely limited on-site; they will aestivate within coastal sage scrub, chaparral, or oak woodlands.

An evaluation of the site's riparian and wetland habitats for Arroyo Toad suitability was conducted in spring 2000 and indicated that the site was not suitable. The methods and results of this investigation are detailed in Focused Surveys section under Arroyo Toad.

Reptiles

A number of Western Fence Lizards (*Sceloporus occidentalis*) were observed, as well as Side-blotched Lizard (*Uta stansburiana*), San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*), Orange-throated Whiptail (*Aspidoscelis hyperythra*), and California Striped Racer (*Masticophis*

lateralis lateralis). Remains of either Southern Pacific Rattlesnake (*Crotalus viridis helleri*) or Red Diamond Rattlesnake (*Crotalus ruber*) were found on-site following the Cedar Fire.

San Diego Banded Gecko (*Coleonyx variegatus abbotti*), Coastal Western Whiptail (*Aspidoscelis tigris stejnegeri*), Common Kingsnake (*Lampropeltis getula*), and Gopher Snake (*Pituophis catenifer*) can be found regularly in similar chaparral, grassy areas, and rocky outcrops such as occur at the Camp. Species such as the Southern Alligator Lizard (*Elgaria multicarinata*) and Ringneck Snake (*Diadophis punctatus*) are expected in the oak woodlands. Also, the Coronado Skink (*Eumeces skiltonianus interparietalis*) is regularly is found in shaded areas with heavy leaf litter such as occurs in the oak woodlands on-site. Two-striped Garter Snakes (*Thamnophis hammondii*) may forage seasonally in the West Branch of San Vicente Creek on the property. As previously mentioned, the Granite Night Lizard may occur within the western portions of the Camp where large, undisturbed expanses of rock outcrop persist.

Recorded snakes trapped or observed by Lawrence Klauber (unpublished notes) from nearby "Mussey" are the Rosy Boa (*Lichanura trivirgata*), Lyre Snake (*Trimorphodon biscutatus*) Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*) Speckled Rattlesnake (*Crotalus mitchelli*), and Night Snake (*Hypsiglena torquata*). Finally, CNDDB data indicates the presence of the Coast Patch-nosed Snake in the immediate vicinity of the Camp (Scheidt 1994 in CDFG 2006). CNDDB data (CDFG 2006) also confirms the presence of the following reptile species within the Camp/Mussey Grade Road area: Western Whiptail and San Diego Horned Lizard.

Birds

A total of 44 species of birds were observed on the site during the April 1999 fieldwork, an additional 4 species were observed during spring 2000 work, and finally 4 additional species were recorded during 2001 fieldwork. Many of these are typical of oak or chaparral habitats. These include the Common Barn Owl (*Tyto alba*), Northern Flicker (*Colaptes auratus*), Western Scrub-Jay (*Aphelocoma californica*), Common Bushtit (*Psaltriparus minimus*), Bewick's Wren (*Thryomanes bewickii*), House Finch (*Carpodacus mexicanus*), California Quail (*Callipepla californica*), Wrentit (*Chamaea fasciata*), California Thrasher, Spotted Towhee, California Towhee, Pacific-slope Flycatcher (*Empidonax difficilis*), House Wren (*Troglodytes aedon*), Lesser Goldfinch (*Carduelis psaltria*), and Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*). Canyon Wrens (*Catherpes mexicanus*) were present at the rocky, higher elevations, adjacent to burned portions of chaparral on the western site boundary. A Hermit Thrush was found dead, although apparently not depredated, along a trail through chaparral. Also, a female hummingbird, either a Rufous Hummingbird (*Selasphorus rufus*) or Allen's Hummingbird (*Selasphorus sasin*), was observed during one visit to the site (identification of Rufous Hummingbird or Allen's Hummingbird females generally requires in-hand examination). Lazuli Buntings (*Passerina amoena*) were observed on-site during the wetland delineation work and are expected to utilize portions of the property during migration.

A California Gnatcatcher was identified during previous biological surveys; however, no California Gnatcatchers were observed during general or focused surveys in 1999-2001 and CNDDB data (2006) does not indicate the presence of the species within the Camp or immediate vicinity. For additional information regarding the methods and results of 1999 USFWS protocol California Gnatcatcher surveys, see Focused Surveys section.

Nuttall's Woodpeckers (*Picoides nuttallii*) and Acorn Woodpeckers (*Melanerpes formicivorus*) were common on the site in oak canopy. In addition, Dark-eyed Junco (*Junco hyemalis*), Orange-crowned Warbler (*Vermivora celata*), Warbling Vireo (*Vireo gilvus*), Phainopepla (*Phainopepla nitens*), Ash-throated Flycatcher, Nashville Warbler (*Vermivora ruficapilla*), Black-headed Grosbeak (*Pheucticus melanocephalus*), Oak Titmouse, and Lark Sparrow (*Chondestes grammacus*) were observed within the oak woodlands. Song Sparrow, Black Phoebe (*Sayornis nigricans*), Common Yellowthroat, and Wilson's Warbler (*Wilsonia pusilla*), species typically associated with wetlands, were found in the riparian areas.

Species observed in a variety of habitats on-site included American Robin (*Turdus migratorius*), Mourning Dove (*Zenaida macroura*), Anna's Hummingbird (*Calypte anna*), Costa's Hummingbird (*Calypte costae*), American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), Western Kingbird (*Tyrannus verticalis*), and European Starling (*Sturnus vulgaris*). Western Bluebirds were also observed on-site utilizing Non-Native Grasslands adjacent to oaks or Non-Native Woodlands. A Common Raven nest was identified just off-site to the west.

Red-tailed Hawk, Red-shouldered Hawk, Cooper's Hawk (*Accipiter cooperii*), and American Kestrel (*Falco sparverius*) were observed on-site during spring fieldwork. An active Red-tailed Hawk nest was located at the northern property boundary and previous biological work located a Cooper's Hawk nest within oak woodlands on-site. Although a Red-shouldered Hawk nest could not be confirmed on-site, consistent observations of a pair suggest that an on-site nesting location is likely. Both Cooper's Hawks and Red-shouldered Hawks were flushed from the oak woodlands, while a Red-tailed Hawk was observed perched in a Eucalyptus tree overlooking Disturbed uplands and Non-Native Grasslands. Golden Eagles have been documented nesting in several nearby locations, the closest of which is within a mile of the Camp boundary. In addition, a Western Screech Owl and Common Barn Owl were flushed from on-site oak woodlands, and numerous Turkey Vultures (*Cathartes aura*) were consistently observed.

Some species not observed by M&A biologists but expected to utilize portions of the site include Bullock's oriole (*Icterus bullockii*), White-tailed Kite (*Elanus leucurus*), and Golden Eagle. Species with low potential for occurrence on-site during the appropriate season include Yellow Warbler (*Dendroica petechia*), Sharp-shinned Hawk (*Accipiter striatus*), and Ferruginous Hawk (*Buteo regalis*).

Finally, a Green Parakeet (*Aratinga holochbra*), observed during 2000 fieldwork, is likely an escaped pet.

Mammals

Ten species of mammals were either directly observed or detected by observation of their tracks, scat, nests, or other sign. Without trapping, a number of resident mammals may not be readily detected. Many mammals are nocturnal and secretive; signs for a number of species, particularly rodents, can be similar.

One of the most conspicuous mammals in coastal California is the California Ground Squirrel. These large, diurnal rodents are often common (as they are on the Camp) around rural developments, and on disturbed lands. They are an important prey item for mammalian carnivores, raptors, and large snakes. Another common mammal, the Botta's Pocket Gopher (*Thomomys bottae*) is also found on the site, as indicated by characteristic burrows. Numerous Desert Cottontails (*Sylvilagus*

audubonii) were observed and Lagomorph scat is found throughout the property. The presence of the Dusky-footed Woodrat is evident by the appearance of its very large stick nests, which were found in oak woodland and dense chaparral. Mule Deer scat was also observed on-site; a single individual was detected on-site in 2000 and 2 deer were observed in 2007. At least 2 carnivores are present, as indicated by their scat, Coyote and fox, presumably Gray Fox (*Urocyon cinereoargenteus*). Bobcats were observed during current and previous biological work on-site and Mountain Lion likely occur occasionally within relatively undisturbed areas of chaparral. The Ringtail (*Bassariscus astutus*), a rarely documented nocturnal mammal, is also expected due to the presence of extensive uninterrupted chaparral habitats. Other mammals that are likely resident in the chaparral and oak habitats include Virginia Opossum (*Didelphis virginiana*), Western Spotted Skunk (*Spilogale gracilis*), Raccoon (*Procyon lotor*), and Striped Skunk (*Mephitis mephitis*). Skunk scent was detected within oak riparian woodland.

Undoubtedly there are a number of bats species that forage over the site; without surveys it is impossible to determine what species utilize the site regularly. Some bat species roost in trees (e.g., *Lasiurus* species) and may occupy woodland habitat on the site. Potentially present in the area are the Yuma Myotis (*Myotis yumanensis*), which occurs in oaks and broken chaparral habitat; California Myotis (*Myotis californicus*), which regularly occurs near wooded canyons and in chaparral; the Western Small-footed Myotis (*Myotis ciliolabrum*) and Mexican Free-tailed Bat (*Tadarida brasiliensis*), which roost mainly in crevices and forage in multiple habitats; and the regionally common Big Brown Bat (*Eptesicus fuscus*). Both the Long-eared Myotis (*Myotis evotis*) and the Townsend's Big-eared Bat (*Plecotus townsendii townsendii*) could use Camp woodlands and riparian forests for foraging, but no site-specific information is available to more accurately determine the likelihood of species occurrence on-site. Known from the San Vicente Reservoir area are the Pallid Bat (*Antrozous pallidus*) and the California Mastiff Bat (*Eumops perotis californicus*), a sensitive species sometimes associated with chaparral and live oaks (PSBS 1993b). The Western Pipistrelle (*Pipistrellus hesperus*) is a common bat in San Diego County and has been identified roosting in the vicinity of the Camp (PSBS 1993a). Finally, the Big free-tailed Bat (*Nyctinomops macrotis*), and Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*) are not expected to roost on-site but it may utilize nearby cliff nesting sites and forage within the Camp's riparian and edge habitats. According to local bat researcher, Drew Stokes, the following species have a high probability of foraging within at least a portion of the Camp: California Myotis, Small-footed Myotis, Mexican Free-tailed Bat, Big Brown Bat, Long-eared Myotis, Townsend's Big-eared Bat, Pallid Bat, California Mastiff Bat, Western Pipistrelle, and Pocketed Free-tailed Bat (D. Stokes pers. com.).

Small mammal fauna within a project site cannot be described with complete certainty absent extensive trapping efforts. However, based on the results of limited trapping and the presence of suitable habitats, the following species are known or expected to occur on-site: Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*), Dulzura Kangaroo Rat (*Dipodomys simulans*), San Diego Desert Woodrat (*Neotoma lepida intermedia*), California Mouse (*Peromyscus californicus*), Western Harvest Mouse (*Reithrodontomys megalotis*), Cactus Mouse (*Peromyscus eremicus*), and Deer Mouse (*Peromyscus maniculatus*). The California Vole (*Microtus californicus*) is also expected to occur within Camp property. In general, the quality of the habitats present at the Camp indicates that a fairly rich mammalian fauna is present.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive Habitats

Sensitive habitats are those habitats considered sensitive by the County for the purposes of California Environmental Quality Act (CEQA), RPO, and MSCP Subarea Plan/Biological Mitigation Ordinance (BMO) compliance.

The BMO and MSCP Subarea Plan classify wildlife habitats according to a 4-tier system. Habitats are classified in order of decreasing sensitivity. Tier I habitats include wetlands and riparian habitats, oak woodlands, and Mafic Southern Mixed Chaparral. Diegan Coastal Sage Scrub and Coastal Sage-Chaparral Scrub are Tier II. Tier III habitats include Southern Mixed Chaparral and Non-Native Grasslands. Finally, Tier IV habitats are Disturbed, Agricultural Lands, and Eucalyptus or other Non-Native Woodlands. Although lower Tier habitats (III or IV) may have increased sensitivity status due to the presence of sensitive species or foraging potential, examination of on-site Tier III and IV habitats did not reveal an overall increase in sensitivity. The only exception is the area of Southern Mixed Chaparral that supports Gander's Butterweed or Ragwort (*Packera* [formerly *Senecio*] *ganderi*), located in the western portion of the project site.

Wildlife Corridors

The BMO defines "Corridor" as a specific route that is used for movement and migration of species. A corridor may be different from a "Linkage" because it represents a smaller or more narrow avenue for movement. The BMO goes on to define a "Linkage" as an area of land which supports or contributes to the long-term movement of wildlife and genetic material (County of San Diego 1996).

Neither the County MSCP Subarea Plan nor the Poway Habitat Conservation Plan/Natural Communities Conservation Planning (HCP/NCCP) Subarea Plan identifies a corridor in this area (Ogden 1996a and County of San Diego 1997).

As addressed within the earlier methods section, a map-based (GIS) analysis was conducted to identify potential on-site corridors. After considering the presence of high quality habitats, conducive topography, and human encroachment or development, field indicators were used to augment the map-based analysis.

Within the project region, there are several expansive, significant biological areas, which have been assessed as high quality habitat on the Habitat Evaluation Map contained within the County MSCP Subarea Plan. These areas include lands surrounding State Route 67 to the west of the project site, lands to the southwest (San Vicente Open Space Preserve), and lands to the southeast, which form a connection with the recently preserved Monte Vista Ranch lands. In the immediate project vicinity, these regional high quality habitat areas connect via the high quality oak riparian habitat associated with the West Fork of San Vicente Creek (County MSCP Subarea Plan Figure 4-1) and high to very high quality habitats that border the southeastern edge of the Camp.

As expected, much of the topography that favors movement (canyon bottoms) also favors higher quality habitats; thus, likely movement routes delineated based on topography generally corresponded with the high quality linear habitat connections. In some cases, topography and habitats create a "dead-end" route, where drainages abut steep slopes; these areas are less likely to support wildlife movement.

In the case of the Camp, existing on-site development in the central valley portion of the site and ranching development to the north and south, limit the likelihood of extensive north-south wildlife movement, despite the advantageous topography.

Thus, having examined regional connectivity potential, habitat quality, topography, and existing human development, the primary movement routes identified were east-west routes south of the Camp and along the West Fork of San Vicente Creek within the northern Camp property. Fieldwork conducted over several years supported designation of the West Fork of San Vicente Creek as a corridor. Through observation of tracks, scat, and individual mammals, bobcat, coyote, grey fox, and mule deer were identified as utilizing the West Fork corridor on-site. Although each of these species was also identified in other on-site areas, track abundance was higher at the West Fork-Mussey Grade Road connection than at other areas examined.

The Camp's contiguous riparian oak woodlands associated with the West Fork of San Vicente Creek, form the local east-west corridor. This local corridor crosses Mussey Grade Road at the entrance to the Camp where an underpass, if utilized, permits the continued safe passage of wildlife to the southeast and provides evidence of local corridor use, in the form of numerous tracks. To the east, this local corridor connects with the Iron Mountain Preserve lands. On-site, the corridor appears to be utilized by meso-predators, Bobcat, Coyote, and Mule Deer.

[The Biological Monitoring Plan for the Multiple Species Conservation Program is one of the few MSCP documents to address regional vs. local corridors. It states that: "regional corridors link 2 or more large areas of natural open space and are necessary to maintain demographic and genetic exchange between wildlife populations residing within these geographically disjunct areas. Local corridors allow resident animals access to necessary resources within a large habitat patch and they may function as secondary connections to the regional corridor system" (Ogden 1996b).] A regional corridor has not been identified on-site, as there is a lack of habitat connectivity to the north, east, and south of the site (regionally), due to residential development. No evidence exists that on-site habitats are necessary to maintain the viability of wildlife populations in the region. Specifically, rural residential development occupies the land eastward and additional development has been approved immediately east of Mussey Grade Road; north of the site, native habitats have largely been converted to agricultural use (Golden Eagle Ranch and other equestrian facilities in southern Ramona); and south of the site, limited agricultural and rural development combined with Mussey Grade Road's impact on the riparian corridor and the area's topography (numerous steep north-south ridgelines) limit the suitability of the area for regional north-south wildlife movement. Finally, a more suitable (east-west) regional corridor exists to the south through the San Vicente Open Space Preserve.

Additional evidence of wildlife movement (the presence of scat, predominantly Coyote) was observed along some of the maintained and non-maintained trails. The use of a "least resistance route" with sufficient cover is expected to account for these observations. As no specific linear feature or habitat is associated with such "trail" routes they are likely advantageous movement avenues, but not necessary corridors for daily or seasonal movement.

Sensitive Plant Species

Sensitive plants include those listed by USFWS (1999), CDFG (2006), the County (County of San Diego 2007), and the California Native Plant Society (CNPS) (CNPS 2001). Five sensitive plant species were identified within the Camp property: Gander's Butterweed or Ragwort, Felt-leaved

Monardella (*Monardella hypoleuca* ssp. *lanata*), Ramona Horkelia (*Horkelia truncata*), Ashy Spike-moss (*Selaginella cinerascens*), and Engelmann Oak. Ashy Spike-moss is no longer considered sensitive by CNPS but remains on the County's Sensitive Plant List as of September 2006. The population totals for the sensitive species detected on-site, with the exception of Ashy Spike-moss, and expected significance of these populations are addressed below (Table 5).

Table 5. On-site Sensitive Flora Population Estimates and Significance

Common Name Scientific Name	Status	On-site Population (approx. # individuals)[1]	Local and Regional Significance Notes
Ramona Horkelia (*Horkelia truncata*)	CNPS List: 1B County List: A	10	Ramona Horkelia populations are presently stable in San Diego County; however, all populations should be protected (Reiser 1996). The state and global rankings for this species indicate that it is less vulnerable than the above species. Given this information, and the small size of the on-site population, the population is expected to be locally but not regional significant.
Felt-leaved Monardella (*Monardella hypoleuca* ssp. *lanata*)	CNPS List: 1B County List: A	7	Populations are presumed stable in San Diego County. All substantial populations should be protected, and significant portions of all smaller populations are also recommended for protection (Reiser 1996). Based on state and CNPS rankings, this species has significantly declined and is vulnerable to extinction. The on-site population also lies in close proximity to the MSCP Critical Population at Iron Mountain. The on-site population of this species is significant on a regional and local level.
Gander's Ragwort/ Butterweed (*Senecio ganderi*)[2]	CNPS List: 1B County List: A	3	Populations are presently stable in San Diego and Riverside Counties (Reiser 1996); however, based on global, state, and CNPS rankings, this species has significantly declined and is vulnerable to extinction. On-site populations of this species are significant on a regional and local level.
Engelmann Oak (*Quercus engelmannii*)	CNPS List: 4 County List: D	>53	Engelmann Oak populations in southern California are still relatively abundant and stable (Reiser 1996). Engelmann Oak has the lowest global, state, and CNPS ranking of all the sensitive plants found on-site. While oak woodlands are a significant declining resource as a vegetation community, this particular on-site oak population is not significant regionally. However, the importance of this population locally should not be underestimated, the on-site population is expected to be a significant local resource.
Ashy Spike-moss (*Selaginella cinerascens*)	County List: D	Abundant, exact total not calculated	Ashy Spike-moss is declining due to urban expansion along the coast. Nevertheless, it still occurs at locations numbering in the thousands, and has recently been de-listed by CNPS. In sheer numbers, this may be one of the most common plants in the County and does not warrant sensitivity status (Reiser 2001). Nearby populations are found on Iron Mountain and west of Daney Canyon. The on-site population is not expected to be significant due to the low sensitivity of this species and its presence throughout much of the region.

[1] Numbers reflect populations prior to Cedar Fire
[2] Name changed to *Packera ganderi*

Despite focused, site-wide surveys, other sensitive plants known from the region including San Diego Thorn-mint (*Acanthomintha ilicifolia*), Encinitas Baccharis (*Baccharis vanessae*), Lakeside Lilac (*Ceanothus cyaneus*), Southern Mountain Misery (*Chamaebatia australis*), San Miguel Savory (*Satureja chandleri*), and Parry's Tetracoccus (*Tetracoccus dioicus*) were not identified on-site during the 1999 or 2000 biological survey work. Lakeside Lilac was previously mapped on the project site, but 1999 botanical investigations indicate that the shrub mapped as Lakeside Lilac was a hybrid. Hybrid *Ceanothus* are relatively common in the region. Heart-leaved Pitcher Sage is known from a ridge leading up to Iron Mountain, south of Dos Picos, and immediately north of the Camp (Oberbauer 1985 in CDFG 1997). This species was not identified on-site, despite efforts to locate it, which included surveys of the entire site in fall 2000. Finally, the potential for occurrence of Delicate Clarkia and Orcutt's Brodiaea on-site was investigated in spring 2000. Surveys indicated the absence of these species on-site.

Ashy Spike-moss was observed in association with rock outcrops throughout the site, particular in the mid to high elevations. Ramona Horkelia, Felt-leaved Monardella, and Gander's Butterweed were all located within chaparral at high elevations within the site. Each species was identified near the western trail that leads to a cross/scenic overlook. Gander's Butterweed was also identified in the northern portion of the project site adjacent to an existing hiking trial. Engelmann Oaks are scattered throughout the property, but occur primarily as individuals within Non-Native Grassland, Coastal Sage Scrub, or Disturbed habitats. Additional information regarding the status, presence, likelihood of occurrence on-site, and habitat of the aforementioned species is available in Appendix 4.

Sensitive Wildlife Species

Sensitive wildlife species include those listed by USFWS (1999), CDFG (2006), and those considered regionally or locally sensitive by the County of San Diego (2000 and 2007)(also included within this list are MSCP covered species). Sensitive species observed on-site were limited; however, numerous mammalian species can be difficult to detect during limited diurnal surveys. A number of sensitive species recorded from the area are expected to use portions of the Camp property. Sensitive species observed or detected within the project site include San Diego Horned Lizard, Orange-throated Whiptail, Turkey Vulture, Cooper's Hawk, Red-shouldered Hawk, Southern California Rufous-crowned Sparrow, Western Bluebird, Northwestern San Diego Pocket Mouse, San Diego Desert Woodrat, and Mule Deer. Table 6 provides information on the numbers of each species observed and the expected significance of the on-site populations.

Table 6. On-site Sensitive Fauna Population Estimates and Significance

Common Name	Status	Individuals observed (#)[1]	Local and Regional Significance Notes
San Diego Horned Lizard	DFG: CSC County Group: 2	1	The on-site San Diego Horned Lizard population would not be significant locally or regionally. This low sensitivity species is present on-site in low numbers and while the site provides suitable habitat, it does not provide extensive areas of high quality habitat.
Orange-throated Whiptail	DFG: CSC County Group: 2	1	Similar to the horned lizard, the on-site whiptail population would not be locally or regionally significant. No evidence of a dense, substantial population was identified on-site currently or historically.
Turkey Vulture	County Group: 1	~6	Observations of Turkey Vultures on-site do not indicate the presence of an on-site breeding area, nor was a roosting area

Common Name	Status	Individuals observed (#)[1]	Local and Regional Significance Notes
			observed. Therefore, the on-site observations do not reflect a locally or regionally significant habitat feature or population.
Cooper's Hawk	DFG: CSC County Group: 1	≥1	Cooper's Hawk observations, coupled with the previous identification of a nest indicate at least historic breeding activity on-site. As an on-site breeding resident, it would be significant locally but not regionally. Cooper's Hawks are an MSCP covered species.
Red-shouldered Hawk	County Group: 1	2	The on-site pair of Red-shouldered Hawks does not represent a significant local or regional population. This species is common in appropriate habitat and has shown stable or increasing populations locally (Unitt 2004).
Western Bluebird	County Group: 2	~8	This seasonally present species does not occupy the site in substantial numbers and would not be considered a locally or regionally significant population due to its low sensitivity coupled with low site use.
Southern California Rufous-crowned Sparrow	DFG: CSC County Group: 1	~4	The on-site biological surveys detected this species presence in low numbers that do not reflect local or regional significance. The relatively limited amount of sage scrub habitat on-site likely precludes a significant population.
Northwestern San Diego Pocket Mouse	DFG: CSC County Group: 2	7	This low sensitivity species is ubiquitously present in suitable habitat throughout the region; therefore, the small on-site population is not locally or regionally significant.
San Diego Desert Woodrat	DFG: CSC County Group: 2	4	This low sensitivity species is ubiquitously present in suitable habitat throughout the region; therefore, the limited on-site population is not locally or regionally significant.
Mule Deer	County Group: 2	3	This species is expected to occur at relatively low densities on-site; while it is an important part of the site's fauna, the on-site population is not significant locally or regionally due to its low sensitivity and the absence of high numbers on-site.

[1] Population estimates for faunal species are not possible without more detailed species-specific investigations. The numbers of individuals observed are presented for information, but do not reflect an active, specific search for these species on the project site.

Sensitive or protected wildlife with potential to occur in the project area include Harbison's Dun Skipper, Western Spadefoot, Silvery Legless Lizard (*Anniella pulchra pulchra*), San Diego Banded Gecko, Coastal Western Whiptail, Northern Red Diamond Rattlesnake, San Diego Ringneck Snake, Coronado Skink, Coast Patch-nosed Snake, Two-striped Garter Snake, Coastal Rosy Boa, Sharp-shinned Hawk, White-tailed Kite, Golden Eagle, California Horned Lark (*Eremophila alpestris actia*), Bell's Sage Sparrow (*Amphispiza belli*), Yellow Warbler, Ferruginous Hawk, Yuma Myotis, Long-eared Myotis, Small-footed Myotis, Spotted Bat, Pallid Bat, Townsend's Big-eared Bat, Pocketed Free-tailed Bat, Big Free-tailed Bat, California Mastiff Bat, San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*), Ringtail, and Mountain Lion. Of the aforementioned sensitive species with potential to occur on-site, the following are covered under the MSCP: Ferruginous Hawk, Golden Eagle and Mountain Lion. A table of sensitive species' presence, status, habitat, and potential for occurrence is provided as Appendix 5.

Of the above-mentioned species, some have only a low probability of occurrence while others are expected, although not observed. Those species, not previously discussed in detail, which have

strong potential to occur on-site (as indicated by a probability of occurrence assessment of "good" or "excellent" in Appendix 5) are discussed in the text below. This information has been collected and is discussed in response to the County's request for further textual discussion of all sensitive species that have a strong potential to use the site.

The San Diego Banded Gecko occurs in coastal and cismontane southern California from interior Ventura Co. south, although it is absent from extreme outer coast. It is uncommon in coastal scrub and chaparral, most often occurring in granite or rocky outcrops in these habitats (Stebbins 1972). This species has been detected at only 3 sites within the San Diego MSCP USGS monitoring study area, La Cresta, Marron Valley, and the San Diego Wild Animal Park (Rochester et al. 2001). Within the sites where they occur, this species is typically very rare. Due to the presence of suitable habitat and a lack of fragmentation, it is believed that this species may occur on-site, undetected, in low numbers similar to those recorded in suitable habitats at La Cresta, the closest MSCP monitoring site to the project site.

The Silvery Legless Lizard was shown to be nearly as uncommon as the San Diego Banded Gecko during monitoring within the MSCP region (Rochester et al. 2001). It was detected at only 5 study sites, the Tijuana Estuary National Wildlife Refuge (NWR), Wild Animal Park, and occasional captures at Point Loma, San Diego NWR, and Torrey Pines (Rochester et al. 2001). The limited occurrence of this species may be due to specific habitat requirements. This lizard prefers loose sandy soils, which are common along the coast or along river drainages. Legless lizards are thought to be soil moisture-limited at the edges of portions of their geographic range. While this lizard may occur within the riparian habitats of the project area, it is not expected in significant numbers, as the availability of suitable soils is limited on-site.

The Coastal Western Whiptail can be found in open, often rocky areas with little vegetation or open microhabitats within shrub or grassland associations. USGS monitoring recorded this species at 9 of the 13 MSCP survey sites (Rochester et al. 2001). This whiptail has been reported from the immediate area and likely exists on-site in relatively low numbers. Although the site supports a considerable amount of rock outcrop, it is typically surrounded by dense chaparral limiting the availability of open, preferred whiptail habitat. Still, Coastal Western Whiptail likely occur in non-substantial numbers within openings in shrub habitats resulting from fires and possibly along sage scrub chaparral edges.

The Coronado Skink seems generalized in the sense that it occurs in a variety of plant associations ranging from coastal sage, chaparral, oak woodlands, pinon-juniper, and riparian woodlands to pine forests (Stebbins 1985), but within these associations it is often restricted to the more mesic pockets (Zeiner et al. 1988). This skink was the most widespread of the sensitive species monitored by USGS in the MSCP region and occurred at all but one study site (Rochester et al. 2001). The USGS monitoring studies indicated that Argentine Ant (*Linepithema hamile*), formerly (*Iridomyrmex humilis*), and Coronado Skink populations may be inversely correlated (Rochester et al. 2001). As the species is somewhat of a habitat generalist and no evidence of a substantial Argentine Ant population was recorded on-site, it is believed that the Camp supports a healthy population of Coronado Skinks.

San Diego Ringneck Snakes are most common in open, relatively rocky areas within chaparral and annual grass habitats where suitable surface litter provides habitat. They tend to prefer areas with increased moisture levels, including riparian zones. The project site provides high quality riparian habitat with an abundance of surface litter. However, the factors that limit this species distribution

within the County are not well understood and as such it is difficult to determine the status of any on-site population. Based on previous reporting by Klauber (Klauber unpublished data), the availability of suitable habitat and the limited presence of non-native predators (domestic or feral cats), a moderate ringneck snake population is expected on-site.

Coast Patch-nosed Snake historically probably occurred throughout the region, particularly in areas with sage scrub and chaparral. This snake seems to require at least a low shrub structure of minimum density since they are not found in habitats lacking this structural component. They are presumed to take refuge and perhaps overwinter in burrows or woodrat nests, so the presence of one or more burrow or refuge-creating mammals may be necessary for this snake to be present. The presence of dense chaparral, sage scrub, and ecotonal scrub chaparral mixes in conjunction with woodrats and ground squirrels provides excellent habitat capable of supporting a substantial population. The species was previously collected within Mussey Grade by Klauber (Klauber unpublished data) and certainly persists in moderate numbers.

The Coastal Rosy Boa is widely but sparsely distributed in desert and chaparral habitats throughout southern California, south of Los Angeles. It inhabits rocky chaparral-covered hillsides and canyons. This species is expected on-site in low numbers in association with suitable habitats in the higher elevations of the Camp, these rocky hillsides are reasonably isolated and are unlikely to have experienced herpetological collection to any significant degree. The species was previously collected within Mussey Grade by Klauber (Klauber unpublished data).

The Northern Red Diamond Rattlesnake was widespread throughout southern California historically and still appears to be widespread but with a patchier distribution (Rochester et al. 2001). It was detected at 8 of the USGS MSCP study sites, appearing to be more common at larger, more inland study sites (Rochester et al. 2001). Although Northern Red Diamond Rattlesnakes are recorded from a number of vegetative associations, they seem to occur more frequently in habitats with heavy brush associated with large rocks or boulders. These rattlesnakes eat mostly and rabbits as adults, but lizards are also significant in the diet of juveniles. Previous collection from the Mussey Grade area by Klauber (Klauber unpublished data), the Camp's relatively large size, inland location, extensive brushy habitats with large rock outcrops, and seemingly diverse and abundant prey base likely indicate a sizable Northern Red Diamond Rattlesnake population in the suitable portions (upper elevations of the western half) of the site.

The Sharp-shinned Hawk is an uncommon migrant and winter visitor, casual in the summer. This species prefers riparian habitats and north facing slopes with perches, but occurs in woodlands, parks, and residential areas throughout San Diego County and a few trees seem to be their only winter requirement. As with other Accipiters, this hawk preys almost exclusively on passerines and may be attracted to residential bird feeders. It may occur in very low numbers as a migrant but would not breed on-site.

The Yuma Myotis is known from the San Vicente Reservoir area and is a common bat species in San Diego. Since suitable habitat exists on-site, it is expected. Substantial populations are not known from the site, but cannot be ruled out. The Pallid Bat, another species known from San Vicente area, utilizes open forest and grassland habitats for feeding and multiple habitats for roosting; there's potential foraging habitat on the Camp. Finally, the California Mastiff Bat is also known from San Vicente area, and expected to forage on-site. Since the Camp supplies open areas with roost locations in rock outcrops, oaks, and chaparral it is likely that this species is present on-site.

Townsend's Big-eared Bat has a strong foraging association with oak woodland, but is a cave rooster. It may forage on-site but is not expected to roost there. Similarly, the Pocketed Free-tailed Bat has good potential to forage on-site but not roost within the Camp area. Even after additional literature searches and consultation with local bat researchers, there is insufficient information to determine, more accurately, the probability of occurrence for the Long-eared Myotis, Small-footed Myotis, and Big Free-tailed Bat. However, none are expected to occur on-site in substantial numbers.

The San Diego Black-tailed Jackrabbit occurs in suitable grassland, sage scrub, and chaparral habitats. They do not typically occur within areas that support dense vegetation exclusively, as they require a degree of openness for locomotion. They may occur in low numbers within the lower elevation open sage scrub and scrub-grassland edge habitats of the Camp, but are unlikely to occur undetected after so many field surveys. Therefore, a substantial population is not expected as no jackrabbits were observed on-site, despite the species somewhat obvious presence.

Both the Ringtail and Mountain Lion are rarely seen; but they are believed present, at least intermittently, on-site. The presence of dense native vegetation, ridgelines and canyons, and, in the case of the cougar, a prey base, lead to the conclusion that while the site is not likely to support a significant population of either species, it is likely utilized by both.

Focused Sensitive Resource Surveys

In addition to general botanical and zoological surveys, a number of focused sensitive species surveys were conducted on-site in 1999 and 2000. Areas of the site covered are either described textually or depicted in Figure 4. The results of these surveys are detailed on the following pages.

N

400 0 400 800 1200 Feet

Salvation Army Camp
Biological Survey Areas

Figure 4

Seasonal Surveys for Sensitive Plants

Initial site surveys in 1999 indicated the presence of several sensitive or rare plant species on-site. Further Delicate Clarkia and Orcutt's Brodiaea surveys were conducted in 2000. Surveys in appropriate habitat on-site were negative for both species. In fall 2000, the Camp was systematically surveyed for Heart-leaved Pitcher Sage and any other sensitive floral species known from the region. Surveyors did not identify this MSCP Narrow Endemic plant anywhere within the Camp, but additional occurrences of other rare plants were documented within the site.

Arroyo Toad Habitat Assessment

The on-site habitat is believed to be suboptimal to support the Arroyo Toad. This is based on the narrowness of most of the channel bottoms (generally 3 feet in width) and the limited amount and duration of water flow in most years. The creek is expected to carry only intermittent and relatively small amounts of water during the course of the year, and is believed to be extremely inadequate to support the early life history stages of the Arroyo Toad. The streambed was largely dry by the mid-April site visit, and the presence of upland species (various sage scrub and chaparral shrubs, and non-native grasses) emphasize the absence of a more substantial hydrologic regime. In addition, the creekbed lacks characteristic breeding habitat features (sand berms, etc.) as well as adjacent sand benches or terraces favored by newly metamorphosed Arroyo Toads. In addition, the segment of the west fork of San Vicente Creek, into which the on-site drainage connects, is only slightly improved habitat over that which occurs on-site. The off-site habitat was shadowed by a dense canopy of mature Coast Live Oaks, and the streambed lacked any standing or flowing water on the April survey date. It is therefore believed unsuitable to support newly metamorphosed Arroyo Toads which are known to stay associated with the sandy edges or terraces of (flowing) streams for extended periods in the late summer and early fall. As no suitable Arroyo Toad habitat was found either on-site or on the adjacent, downstream property to the east/southeast, this species is not expected on-site.

Least Bell's Vireo Habitat Assessment

Least Bell's Vireos were not recorded on-site during previous or current biological investigations. Furthermore, there are no CNDDB database records (2006) of this species from this area, nor is it an occupied site according to the Draft Recovery Plan data for San Diego County (Fish and Wildlife Service 1998). However, riparian habitat exists on-site and was assessed for Least Bell's Vireo suitability in fall 2000.

Least Bell's Vireos are obligate riparian breeders. This species typically nests in willow-dominated areas and are known to prefer early successional habitat, but species composition does not appear to be as important a determinant as habitat structure (Fish and Wildlife Service 1998). Two habitat features appear to be essential for Least Bell's Vireo habitat: the presence of dense cover within one to 2 meters of the ground and a dense stratified canopy for foraging (Fish and Wildlife Service 1998).

The on-site riparian habitats are believed to be low quality in terms of Least Bell's Vireo suitability. They are generally mature oak woodlands characterized by a tall canopy, which shades out the lower shrub layer, limiting the amount of nesting habitat. The persistence of this mature oak canopy throughout virtually all of the site's riparian areas severely limits the amount of potential vireo habitat. Where notable understory occurs it is primarily composed of Poison Oak, not the typical willow or Mule Fat so often utilized by breeding vireos. These patches of understory may, in theory,

be utilized by vireos; however such utilization is seen as unlikely prior to further population recovery.

California Gnatcatcher Focused Survey

California Gnatcatcher habitat consists of on-site Diegan Coastal Sage Scrub, which occupies a small percentage of this site. Some patches of Diegan Coastal Sage Scrub in the southern project area have historically been grubbed, further decreasing habitat quality. As stated earlier, the elevation of the site is within the upper range for California Gnatcatcher occupation in San Diego County.

No California Gnatcatchers were detected on-site during the 1999 focused surveys.

Although a California Gnatcatcher sighting was previously reported from the site, the sighting was never confirmed and was not made by a USFWS incidental take permitted individual. Despite the many field visits to the site by M&A biologists, no evidence of gnatcatcher presence has been detected. In addition, M&A biological investigations of other properties within the immediate area have failed to identify California Gnatcatchers. It is believed that the previously reported sighting may have been a misidentification or a dispersing juvenile from the region but not the immediate area.

Quino Checkerspot Butterfly Focused Survey

The project site contained approximately 100 acres of moderate to moderately high quality Quino Checkerspot Butterfly habitat. The site also contained many nectaring resources, trails, open areas, hilltopping areas, and rock outcrops. However, the site lacked Dot-seed Plantain (*Plantego erecta*), which is a primary Quino Checkerspot Butterfly host plant. Only a few relatively small populations of secondary host plants, Purple Owl's Clover (*Castilleja exserta*) and Bird's Beak (*Cordylanthus rigidus*), were found on-site. No Quino Checkerspot Butterflies were detected during the surveys.

Golden Eagle Nest Site Assessment

A Golden Eagle territory lies adjacent to the project site. An assessment of this nest site was conducted by Wildlife Research Institute (WRI). The assessment was undertaken to provide the necessary data to determine the status of the nest site (active or inactive), the potential for impacts to a nesting pair, and the distance of the nest site from the proposed impact area to determine MSCP Subarea Plan compliance.

The WRI Golden Eagle report noted that although the Iron Mountain nest last fledged young in 1996, the eagle pair within this territory made several nesting attempts since that time, which appeared to have failed due to human disturbance. Courtship and nest building activity were observed in 2001, but any breeding attempt failed. The report outlines a series of factors affecting the Iron Mountain eagle pair (and most Golden Eagle pairs in the County), which can essentially be summarized as loss of foraging habitat due to agricultural and residential development, detrimental agricultural practices (ground squirrel poisoning, eagle shooting), human disturbance of nesting areas, and development associated mortality.

The specific effects of the proposed development are discussed within the WRI report, but these findings were made based on the first plot plan, which is no longer proposed. Distances from the nest site to proposed or existing facilities within the report are, therefore, no longer accurate. An

updated analysis can be found within the Impacts section. The updated analysis was completed by M&A based on the original WRI report, regional eagle information, the County MSCP Subarea Plan, and the updated plot plans and project description. The Golden Eagle report is supplied as Appendix 10.The WRI report also states that loss of foraging area, through development of the Camp, could adversely impact the local eagle pair. This is further addressed in the Impacts section.

Stephens' Kangaroo Rat Trapping Surveys

The results of the trapping survey were negative for Stephens' Kangaroo Rat. Surveys revealed the presence of 2 low sensitivity mammal species, Northwestern San Diego Pocket Mouse and San Diego Desert Woodrat. Additional details are provided within the Presence/Absence Trapping Surveys for Stephens' Kangaroo Rat Report, included as Appendix 9.

IMPACTS

This section provides biological impact thresholds of significance, quantifies or qualifies impacts to biological resources, and provides a significance determination for each impact.

Direct impacts occur when biological resources are altered or destroyed during the course, or as a result, of project implementation. According to the CEQA Guidelines, direct impacts refer to a direct physical change in the environment, which is caused by and immediately related to the project. Examples of such impacts include removal or grading of native vegetation and filling wetlands. Other direct impacts may include substantial loss of foraging or nesting habitat and loss of individuals of sensitive species as a result of habitat clearing.

Although, increased lighting, noise, or dust that is immediately related to and a reasonably assured result of a project would qualify under recent CEQA Guidelines as direct impacts, they are not quantifiable impacts and their effects on biological resources may not occur until later in time. Therefore, for the purposes of this analysis these impacts are grouped under indirect impacts (predominantly addressed under "Edge Effects"). Indirect impacts may include the effects of elevated noise, excessive night lighting within wildlife habitat, change in surface water within a floodplain, and increased erosion or sedimentation.

Typically existing facilities and uses are not considered an impact; thus, existing camp facilities and their associated uses have generally been excluded from the impact analysis (as discussed here). No trail impacts have been identified, the existing trails are not expected to receive a detectable increase in use and project design measures (signs and footstakes) will help to prevent off-trail excursions. The trails are well-established and typically surrounded by dense, uninviting chaparral vegetation. They currently show no indications of off-trail human intrusion, and no change from existing conditions is expected in this regard. No erosion issues, which might be exacerbated by increased use, were identified on existing trails; therefore, increased use of trails is not anticipated to pose a problem or impact. New impacts were also not assessed for existing headquarters, pool, playing fields, and ball court facilities. Roads, parking, and non-native plantings surround these areas, all of which are unlikely to be markedly effected by an increase in use.

THRESHOLDS OF SIGNIFICANCE

The significance of impacts to biological resources is assessed through the CEQA review process and through the review of the project's consistency with the County's RPO, MSCP Subarea Plan, and the BMO. There will generally be a significant effect on biological resources if the project will: 1) substantially affect an endangered, rare, or threatened species or the habitat of such a species; 2) interfere substantially with the movement of any resident or migratory fish or wildlife species, or; 3) substantially diminish habitat for fish, wildlife, or plants. The direct, indirect, and cumulative impacts of a project must be analyzed for significance. Impacts should be evaluated on a case-by-case basis. It is important to note that significance of a given activity is variable according to the setting. The significance of an impact is evaluated after ordinance requirements are incorporated into the project. Resources generally considered significant include vegetation communities that support sensitive plant or animal species, and unique vegetation communities that are limited in distribution and have a critical ecological role. Habitats supporting species considered rare or threatened by the agencies that enforce the California and Federal Endangered Species Act are also regarded as significant resources. A list of sensitive habitat types (RPO 2007, BMO 1996) was presented in the Sensitive Resources section. Impacts to these sensitive resources meet the threshold of significance.

In order to determine the extent of impacts, the acreage of each habitat type impacted and any encroachments into BRCAs should be quantified. When possible, the number of individuals of sensitive species expected to be "taken" should also be quantified. Significance of impacts to habitats is based upon habitat value (as defined in the BMO and MSCP) and the amount of habitat that would be impacted. Impacts to individual species, in addition to impacts to habitat, may be considered significant based upon the rarity and extent of impacts. Impacts to state and federally listed species and all MSCP narrow endemics are considered significant. A determination of significance for other species is based on severity of the impact relative to species distribution (regional core populations), rarity, and conservation afforded the species and its habitat under the MSCP. Impacts to lower sensitivity species (species of special concern, special animals, etc.) are frequently not significant. However, if potential exists for species to occur in numbers such that a potential population impact could be detectable (measurable increment of loss within the regional populations) it is considered significant. According to the CEQA Guidelines (§ 15065), any impact that would reduce the number or restrict the range of an endangered, threatened, or rare species would be considered significant. As such, impacts to non-listed species that do not result in a restriction or alteration of range or a discernable decrease in overall population have not been considered significant.

The County considers impacts to Southern Mixed Chaparral and Non-Native Grassland to be significant due to general historic loss of native and naturalized habitat. The County thus requires mitigation for impacts to these habitats.

Impacts under the alternative site plans have been updated to reflect changes in County wetland jurisdictional boundaries pursuant to the 2007 RPO and the current (2007) Fire Protection Plan. Impacts under the Preferred Site Plan have not been updated herein as the Preferred Site Plan does not comply with certain County ordinances (and is thus not approvable); whereas, the alternative plans are complaint and approvable. To avoid confusion, all tables of impacts have shading over the Preferred Plan column to indicate that these numbers are not reflective of total impacts, but that this plan option is no longer being pursued.

VEGETATION COMMUNITY IMPACTS

Impacts are discussed below according to each project alternatives, Tier (IV through I in ascending order), and vegetation community (habitat) within the Tier and summarized in Table 7. The jurisdictional wetland and Non-Wetland Waters/Streambeds are addressed following the vegetation community discussion.

Table 7. Vegetation Community Impacts by Project Alternative

Vegetation Communities	Existing On-site Acreage	Impacts under Preferred Plan (acres)[1]	Impacts Alternative Plan I (acres)	Impacts under Alternative Plan II (acres)
Emergent Wetland	0.03	0.00	0.00	0.00
Southern Coast Live Oak Riparian Forest	33.63	2.00	1.36	1.36
Mule Fat Scrub	0.02	0.00	0.00	0.00
Southern Willow Scrub	0.73	0.00	0.00	0.00
Coast Live Oak Woodland	20.34	7.29	7.96	7.96
Mafic Southern Mixed Chaparral	6.48	0.00	0.00	0.00
Diegan Coastal Sage Scrub	16.43	13.12	12.29	12.29
Coastal Sage-Chaparral Scrub	46.23	9.26	8.18	8.18
Southern Mixed Chaparral	402.55	37.36	36.73	36.73
Non-Native Grasslands	22.83	12.45[2]	12.41[2]	12.41[2]
Non-Native Woodland	4.39	1.64	1.63	1.63
Disturbed	16.58	9.52	9.37	9.37
Urban/Developed	7.76	4.73	4.72	4.72
Totals	**578.00**	**97.37**	**94.65**	**94.65**

[1] Impacts as calculated in previous versions of this report and not reflective of the 2007 Fire Protection Plan requirements are shaded to indicate that the Preferred Plan is not an approvable project
[2]Includes impacts from wetland creation site

With the application of the Fire Protection Plan that mandated an increased fire management zone, some habitat impacts have increased from those assessed under the Draft EIR. The following habitat impact increases have been noted under the Alternative I Plan: 0.29 acre of Disturbed Habitat, 0.11 acre of Diegan Coastal Sage Scrub, 3.85 acres of Southern Mixed Chaparral, and 1.11 acres of Coast Live Oak Woodland. Similarly, under the Alternative II Plan, the following impact increases have been noted: 0.29 acre of Disturbed Habitat, 0.11 acre of Diegan Coastal Sage Scrub, 4.82 acres of Southern Mixed Chaparral, and 1.11 acres of Coast Live Oak Woodland. The increased impacts to Disturbed areas are not significant. Increases in Diegan Coastal Sage Scrub (<1%), Southern Mixed Chaparral (12% under Alternative I and 15% under Alternative II), and Coast Live Oak Woodland (16%) are minor relative to the total impacts. These increases do not change the degree of habitat impact significance and all impacts would still be mitigated to a level below significant through on-site habitat preservation and management.

Tier IV Habitats

Non-Native Vegetation/Woodland (Holland Code 11000)

Impacts to Non-Native Vegetation/Woodlands occur primarily in the south-central portion of the Camp near existing Camp facilities. Impacts would occur as a result of cabin fire clearance and construction of staff housing.

Due to the exotic nature of the component species and limited wildlife value associated with non-native habitats, impacts would not be considered significant. As Tier IV habitats, no mitigation for impacts is required (County of San Diego 1996). Non-Native Woodlands may have value as a roosting and occasional nesting resource; however, oak woodland is extensive in the immediate area and the on-site Non-Native Woodlands do not necessarily provide overall high or unique wildlife value. Field investigations did not reveal any raptor nests or frequently used perch sites within the exotic on-site woodlands.

Disturbed Habitat (Holland Code 11300)

Impacts to Disturbed Habitat on-site would occur in areas proposed for the construction of staff housing, the education camp, roads, and waterlines. All areas cleared for percolation testing, which now appear disturbed, were done so without the appropriate permits and still require mitigation. Therefore, impacts have been calculated for these areas based on the original vegetation community. Per County direction, these percolation testing areas have been mapped according to their original vegetation community, not as Disturbed.

On-site Disturbed areas do not contain native vegetation and have little biological value; however, they may provide basking sites for reptiles and local travel routes for mammals. Regardless, impacts to Disturbed habitat on-site would not be significant. Due to the presence of native habitats throughout most of the project site the on-site Disturbed habitats do not provide any type of essential connectivity and likely receive little use by wildlife in comparison to neighboring vegetation communities.

Urban/Developed Lands (Holland Code 12000)

Impacts to Urban/Developed Lands include impacts to existing roads, parking areas, or any other existing development feature. Impacts would result from construction of staff housing, cabins, a pool, bathhouse, roads, and parking areas. Impacts are not considered significant as Urban/Developed Lands have little to no biological value and are not regulated under the BMO.

Tier III Habitats

Southern Mixed Chaparral (Holland Code 37120)

Impacts to Southern Mixed Chaparral are anticipated as a result of the proposed project. Chaparral occupies a majority of the Camp and several proposed structures and landscape features will directly impact chaparral. Southern Mixed Chaparral would be directly impacted by the proposed retreat center, leach fields, dining room, education camp, presentation area, and staff housing under the Preferred Site Plan. Approximately 0.28 acre of Southern Mixed Chaparral was cleared outside of

the proposed impact areas for percolation testing, this amount is included in the impact totals within the previous table.

Impacts to Southern Mixed Chaparral are considered significant. As a Tier III habitat, mitigation is required for direct losses, to offset biological impacts on the project site and within the region.

Non-Native Grasslands (Holland Code 42200)

Impacts to Non-Native Grasslands would occur as a result of maintenance building, parking lot, recreational facility (ball courts), cabin, and leach field construction. A 0.47-acre impact to Non-Native Grasslands would occur as a result of on-site wetland creation, this has been included in the table totals.

Grasslands are disappearing rapidly in Southern California because they generally occur on relatively flat ground and are easily developed. Non-Native Grasslands are not comparable to native-dominated areas, and the significance of an impact to this habitat should be addressed based on wildlife value.

Non-Native Grasslands present on-site contribute to species diversity; however, the wildlife value of this community is limited by its location amongst existing Camp facilities and the maintenance (mowing) activities which occur therein. Although Non-Native Grasslands are used extensively for raptor foraging in other parts of Ramona, such abundant utilization was neither observed nor expected on-site. While local Buteos and Accipiters undoubtedly occasionally use the on-site grassland areas, these areas do not support significant raptor foraging for residents or winter visitors. Non-Native Grasslands adjacent to the site provide better raptor foraging habitat and appear to be higher in overall wildlife value. Although the potential loss of grasslands does not represent a significant raptor foraging impact, it is County policy that impacts to this habitat type are significant due to overall recent and historic losses.

Tier II Habitats

Diegan Coastal Sage Scrub (Holland Code 32500)

Impacts to Diegan Coastal Sage Scrub would result from the proposed staff housing, leach fields, parking areas, central Camp roads, and the retreat center access road.

April 1999 fieldwork revealed areas cleared for percolation testing and peripheral areas, which were grubbed. The southeastern portion of the site, between the fenced property boundary and base of the chaparral-covered slope, was historically mapped as Disturbed uplands and Coastal Sage Scrub. The majority of this area had been grubbed; these portions had few shrubs, sections cleared to bare ground, some non-native grasses, some recovering sage scrub indicators, and numerous weedy species. These areas were mapped as Diegan Coastal Sage Scrub based on the presence of recovering sage scrub species as indicators of the original vegetation community and these impacts (3.25 acres in total) were included within the previous table's impact acreages.

There has been a significant loss of this sensitive, native vegetation community throughout the County. In southern California, Diegan Coastal Sage Scrub supports the California Gnatcatcher, a federally threatened species, as well as a host of other regionally or locally sensitive species. The

proposed Diegan Coastal Sage Scrub project impacts are considered significant and will require mitigation.

Coastal Sage-Chaparral Scrub (Holland Code 37G00)

Direct impacts to Coastal Sage-Chaparral Scrub are anticipated from the construction of the leach fields, staff housing, cabins, education camp, and a dining room under the Preferred Site Plan. Clearing for percolation testing had also occurred locally in Coastal Sage-Chaparral Scrub on the eastern-central portion of the site. Although the surrounding uncleared vegetation was predominantly chaparral, previous mapping suggests that portions of cleared areas contained Coastal Sage Scrub species.

Impacts to Coastal Sage-Chaparral Scrub are significant, as it is a Tier II habitat and similar to Diegan Coastal Sage Scrub may support sensitive species and narrow endemics.

Tier I Habitats

Mafic Southern Mixed Chaparral (Holland Code 37122)

No impacts to Mafic Southern Mixed Chaparral are anticipated as a result of the proposed Camp project (under any proposed alternative). Mafic Southern Mixed Chaparral is restricted to higher elevations, where no alteration of existing conditions is proposed. It is proposed for inclusion within the open space easement in its entirety, regardless of the plan alternative selected.

Southern Coast Live Oak Riparian Forest (Holland Code 61310) and Coast Live Oak Woodlands (Holland Code 71160)

Potential impacts to oak trees can occur at various levels. The most severe impact is the direct removal of a tree or trees. The next level of severity, which ultimately has the same result, is any action that may result in the early loss of a tree well before natural senescence. Development within oak woodlands at other locations has shown that various construction practices seriously injure or inadvertently kill oaks. Among these practices are irrigation, soil compaction, filling, and paving. A number of indirect oak impacts, such as eventual oak loss due to change in moisture regime or soil compaction, can also occur as a result of various construction practices

The root zone encompasses an area one-third larger than the drip line. Construction practices that may directly or indirectly impact the tree should be avoided within this area. Pruning of Coast Live Oaks has not been studied sufficiently to model the effects of this activity on tree growth and survival. The ultimate project effects on oak trees cannot be ascertained but the chances are high that health of some trees will be negatively affected, possibly resulting in early mortality.

According to the County (Dickman 2000), oak impacts should be assessed as follows:

> "Any oak woodlands or riparian forest within the proposed development bubble are considered impacted since the biological value of the habitat, including the understory, will be significantly decreased by potential grading development, foot traffic, equipment storage, and various other potential activities within the development area. Wildlife use of the habitat will be severely limited to those species accustomed to human interaction.

> Individual trees not mapped within an oak woodland or forest are treated the same with regard in determining which are impacted. Those trees that have their canopy inside or within 25 feet of a ground disturbing/altering impact are considered impacted (this excludes existing roadway paving). Individual oaks within areas that are currently heavily used by existing Camp facilities may not be considered a biological resource and therefore, may not require mitigation. Regardless of whether an oak tree is considered biologically valuable, it is considered sensitive in the County for aesthetic reasons. For this reason, the Major Use Permit may have a condition that no oak trees may be removed except for health and safety purposes."

A portion of the on-site oaks would be directly impacted through removal. In addition, pruning of trees adjacent to facilities would be necessary, both to allow construction machinery to maneuver, and to enable safe access to and from project amenities. Finally, project design will require grading or trenching within the drip-line of some oaks. Consequently, a number of long-term impacts to oak woodland resources may occur as a result of this activity.

Both individual oaks and areas of oak woodland would be affected by the proposed project. According to Preferred Site Plan, impacts to Southern Coast Live Oak Riparian Forest would result from the construction of the retreat center and access road, waterlines, and leach fields. As previously mentioned, impacts to individual oaks are only addressed where a mature tree (greater than 6" dbh) lies outside of a woodland or forest; within woodland and forest areas, individual trees were not counted or mitigated separately, but were assessed by acreage.

The proposed retreat center and access road, parking lots, dining facilities, maintenance building, staff housing, leach fields, cabins, and roads would also directly and/or indirectly impact Coast Live Oak Woodlands.

Finally, by imposing the County directive that oaks within 25 feet of an unbuffered development should be considered impacted, potential off-site oak impacts would result from the project. The location of leach fields adjacent to the property boundary could impact off-site oak woodlands. A total of 0.04 acre of off-site oak impacts may result under the Preferred Site Plan or either Reduced Alternative Plan. These impacts have been taken into consideration in determining impacts and are included within the previous table totals.

Oak impacts are considered significant because of the high number of oak trees present on-site, the size of the proposed project, and the quality of oak woodland and forest habitat on-site, as well as the sensitivity of oak habitats (i.e., County Tier I).

Mule Fat Scrub (Holland Code 63310)

Impacts to Mule Fat Scrub are not anticipated under any project alternative.

Southern Willow Scrub (Holland Code 63320)

The on-site Southern Willow Scrub would not be impacted by project construction under any project alternative.

Emergent Wetlands (Oberbauer 52440)

Emergent Wetland occurs in several locations on-site, 2 of these locations fall within the Proposed or Reduced Alternative Plans' development bubble. To avoid impacts within these 2 areas, the project has incorporated permanent fencing and signage design elements and included requirements for construction fencing and monitoring relative to protection of this habitat. All of these avoidance measures will be conditions of project approval. The purpose of the temporary "construction" fencing and monitoring is to ensure that clearing, grading, and/or use or storage of heavy equipment does not occur within this sensitive habitat. Since Emergent Wetlands can be difficult to identify by the lay person, it would be expected that without obvious delineation this area would be impacted during the course of construction or subsequent fire clearing. The use of construction fencing to delineate environmentally sensitive areas is a common practice and generally accepted as a means of impact avoidance, if monitored. Since the Emergent Wetland areas are situated adjacent to roadways that will require fire clearing, without permanent delineation they could be impacted by future mowing and/or clearing for fuel reduction. The project proposes the implementation of permanent split-rail fencing at each of the 2 locations with signs affixed that designate the area beyond as a sensitive habitat exempt from fire clearing. This is discussed subsequently under the Project-Specific Mitigation And Impact Avoidance Design Elements section. These project measures would avoid impacts to Emergent Wetlands under any alternative.

JURISDICTIONAL WETLAND AND NON-WETLAND WATERS OF THE U.S. DIRECT IMPACTS

The following table (Table 8) summarizes the impacts to jurisdictional wetlands resulting from the Preferred Plan and the 2 Reduced Alternatives. Although some on-site drainages previously jurisdictional under the RPO are no longer RPO jurisdictional, there is no development proposed in these areas and they will remain undeveloped (100%) and almost entirely (92%) within dedicated biological open space.

Table 8 . Impact Acreages for Jurisdictional Wetlands and Non-Wetland Waters of the U.S./Streambed

Jurisdictional Habitats	**Impacts from the Preferred Plan (acre)[1]**	**Impacts from the Reduced Alternative I Plan (acre)**	**Impacts from the Reduced Alternative II Plan (acre)**
Southern Coast Live Oak Riparian Forest (SCLORF) (Holland Code 61310)			
ACOE Jurisdiction	0.002	0.00	0.00
CDFG Jurisdiction	2.00	1.36	1.36
County Jurisdiction	0.05	0.00	0.00
Southern Willow Scrub (Holland Code 63320)			
ACOE/CDFG/County Jurisdiction	0.00	0.00	0.00
Mule Fat Scrub (Holland Code 63310)			
ACOE/CDFG/County Jurisdiction	0.00	0.00	0.00
Emergent Wetland (Oberbauer Code 52440)			
ACOE/CDFG/County	0.00	0.00	0.00

Jurisdictional Habitats	Impacts from the Preferred Plan (acre)[1]	Impacts from the Reduced Alternative I Plan (acre)	Impacts from the Reduced Alternative II Plan (acre)
Jurisdiction			
Non-Wetland Waters of the U.S./Streambed			
ACOE Jurisdiction	0.17	0.13	0.13
CDFG Jurisdiction	0.23	0.15	0.15
County Jurisdiction	0.17	0.03	0.03
Total			
ACOE Jurisdiction	0.17	0.13	0.13
CDFG Jurisdiction	2.23	1.51	1.51
County Jurisdiction	0.22	0.03	0.03

[1] Impacts as calculated in previous versions of this report and not reflective of the 2007 Fire Protection Plan requirements are shaded to indicate that the Preferred Plan is not an approvable project

An explanation of which project elements would result in the impacts to jurisdictional habitats was addressed under the previous vegetation communities' impacts text.

Any impacts to wetlands or Non-Wetland Waters/Streambed are significant prior to mitigation. The project would result in impacts to wetlands and waters and/or streambeds that fall under either or both state and federal regulatory programs. Under Section 404 of the Clean Water Act, placement of dredged or fill material within Waters of the U.S. requires a permit issued by the ACOE. The Clean Water Act also requires the issuance of a state water quality certification or waiver under Section 401 to be issued by the Regional Water Quality Control Board (RWQCB) for any action that may result in degradation of the waters of the State. In addition to the federal act requirements, the proposed work would constitute an alteration of a streambed and would fall under the jurisdiction of CDFG pursuant to Section 1600 et seq. of the California Fish and Game Code.

Non-Wetland Waters of the U.S.

Impacts to County jurisdictional Non-Wetland Waters are expected from the retreat center access road (under the Preferred Plan) and human foot traffic. Non-Wetland Waters transverse the existing Camp facilities in several locations. Where foot traffic is anticipated to cross these Non-Wetland Waters (drainages) impacts have been assessed. Vegetation communities isolated by existing and proposed physical development are considered impacted (based on County direction and reduced wildlife value), but the Non-Wetland Waters drainages are only considered impacted if they lie within an area of direct impact (from construction and/or foot traffic).

Based on what was mapped during the wetland delineation survey in May 2000, it is estimated that an additional 0.006-acre of Non-Wetland Waters was impacted by the unpermitted filling activities in 2000. Since wetland permits were not granted prior to the filling activities, after-the-fact permits would be required, or fill may be required to be removed prior to processing new permit applications. All impacts to Non-Wetland Waters are significant and require mitigation.